

TECHNICAL INFORMATION

THREE-INCH SHORT SPAN (NAILING TYPE)

GYPSUM ROOF TILE



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

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3" SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE

DESCRIPTION

3" Short Span (Nailing Type) Gypsum Roof Tile are precast, solid, reinforced gypsum roof deck units, usually supported by steel tee sub-purlins. A grouting groove along top edges is provided.

Size—3" x 12" x 30".

FUNCTION AND UTILITY

NAIL-HOLDING POWER. These slabs are cast from a dense, hard gypsum, to give maximum nail-holding power. Plain wire rust resisting nails providing a 2" penetration will be satisfactory for the application of ornamental slate or tile roof coverings. *A low cost nailing type roof deck.*

FIREPROOF. Composed almost entirely of gypsum, these units will not burn or transmit high temperatures until completely calcined—a very slow process.

STRONG. 3" Short Span (Nailing Type) Gypsum Roof Tile will safely support a load of over 100 pounds per sq. ft., uniformly distributed. The size of sub-purlins is usually determined by the design load which seldom exceeds 60 pounds per sq.ft. The sub-purlins, welded to roof members, give bracing strength and rigidity to the frame. See Technical Data for sub-purlin sizes.

LIGHT WEIGHT. Only 17 pounds per square foot exclusive of sub-purlins. Light dead load saves structural steel.

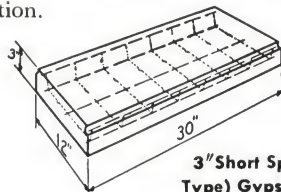
INSULATION VALUE. With a "U" factor of .43 Btu per hour, per square foot, per degree difference in temperature, including roof covering, it provides adequate insulation for all normal requirements.

ADAPTABLE.

(a) 3" Short Span Gypsum Roof Tile are designed especially for pitched roof decks but are adaptable to flat or slightly curved or warped surfaces as well.

(b) *Winter construction.* Since units are precast, requiring little grout (after deck is in place), many winter delays are avoided.

(c) *Speed of erection.* Convenient size and weight of tile make possible fast erection.



3" Short Span (Nailing Type) Gypsum Roof Tile

"PYROFILL", "STRUCTOLITE" and "WEATHERWOOD" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "PYROFILL" and "STRUCTOLITE" identify the particular gypsum fiber cements and "WEATHERWOOD" identifies the particular fiber insulation board manufactured only by United States Gypsum.

TECHNICAL DATA TABLES

| 3"-SHORT SPAN GYPSUM ROOF TILE | | | | | STEEL SUB-PURLINS SPACED 2'-6 3/4" O.C. BASED ON TOTAL ROOF LOAD OF 55 LBS PER SQ. FT. AND M = 1/10 WL | | | | | |
|---|-------|-------------------|--------------------------|-------------------------------|--|--|-----------------------------------|--|--|--|
| DIMENSIONS | | | WEIGHT PER SQ. FT. | DESIGN LOAD PER SQ. FT. | SIZE & SECTION MODULUS OF SUB-PURLINS | WEIGHT PER LIN. FOOT SUB- PURLIN | WEIGHT PER SQ. FOOT ROOF | ALLOWABLE SPAN | | |
| THICK | WIDTH | LENGTH | | | | | | 18,000 LBS PER SQ. IN. STRESS | 20,000 LBS PER SQ. IN. STRESS | |
| 3" | 12" | 30" | 17 LBS | 55 LBS | | | | | | |
| THERMAL CONDUCTIVITY BTU PER SQUARE FOOT PER HOUR PER DEGREE F DIFFERENCE IN TEMPERATURE | | | | | U-S-G NO. 178 BULB TEE S=.348 in ² | 2.66 LBS | 1.03 LBS | 6'-1" | 6'-5" | |
| | | | | | U-S-G NO. 218 BULB TEE S=.450 in ² | 2.80 " | 1.08 " | 6'-11" | 7'-3" | |
| | | | | | 2 1/2" X 2 1/2" X 5/16" STD. TEE S=.500 in ² | 5.50 " | 2.15 " | 7'-3" | 7'-8" | |
| | | | | | 2 1/2" X 3" X 5/16" STD. TEE S=.720 in ² | 6.10 " | 2.40 " | 8'-9" | 9'-3" | |
| | | | | | 3" X 3" X 5/16" STD. TEE S=.740 in ² | 6.70 " | 2.61 " | 8'-10" | 9'-4" | |
| NO INSULATION | | 1/2"-WEATHERWOOD* | 1"-WEATHERWOOD* | | | | | | | |
| 0.43 | | 0.28 | 0.19 | | | | | | | |



LIMITATIONS OF USE

1. *Job protection.* During job storage, gypsum tile should be reasonably protected from exposure to rain and snow, and the roof covering should be applied as quickly as possible after installation of gypsum tile.

2. *Roof covering.* Built-up roof coverings should be applied according to standard specifications of roof covering manufacturers association. For application of slate or tile, corrosion-resistant nails should be used and driven to a penetration of 2". Rigid wire type nails are preferred.

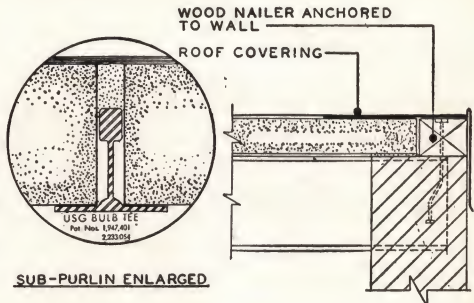
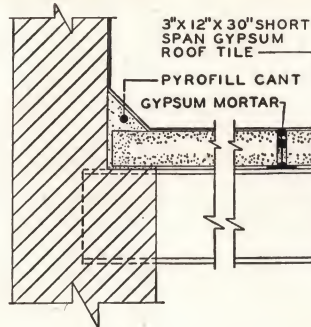
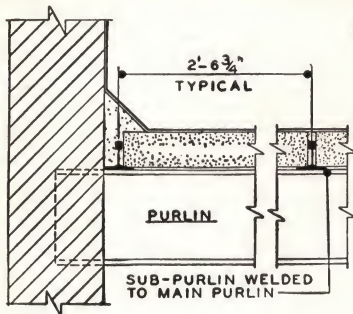
3. *Excessive moisture.* 3" Short Span Gypsum Roof Tile are designed for use on buildings having normal humidity. Whenever continuous high humidity is anticipated, such as in wet process plants, consult the nearest United States Gypsum Sales Office for recommendations.

4. *Excessive temperature.* 3" Short Span Gypsum Roof Tile are designed for use on buildings having normal to moderately high temperatures. Where unusually high temperatures are anticipated, such as in foundries, furnace rooms, over breechings, etc., consult the nearest United States Gypsum Sales Office for recommendations.

3" SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE

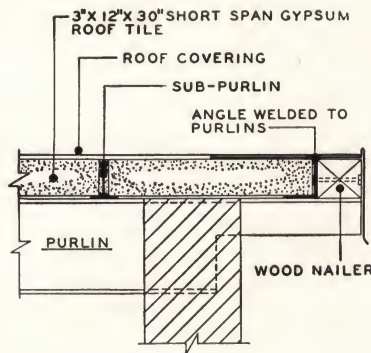
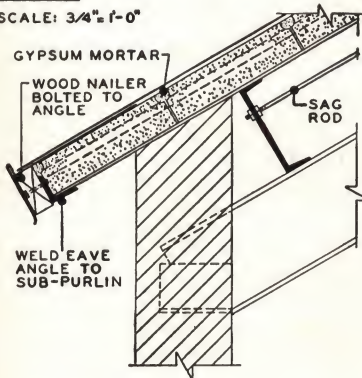
PARAPET & END WALLS:

SCALE: 3/4" = 1'-0"

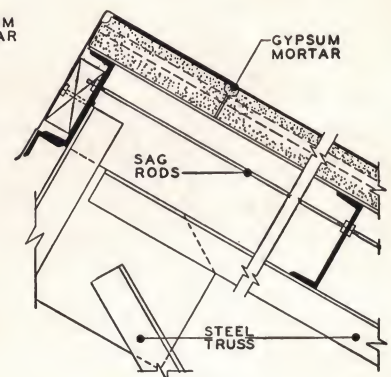
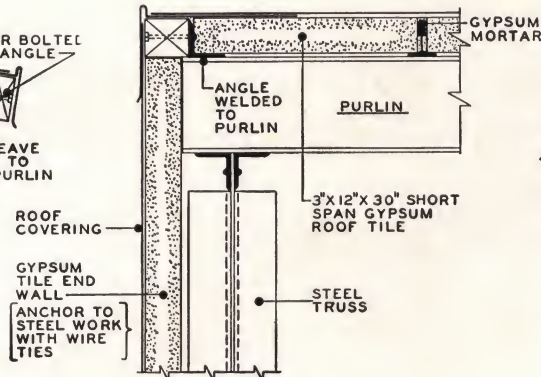
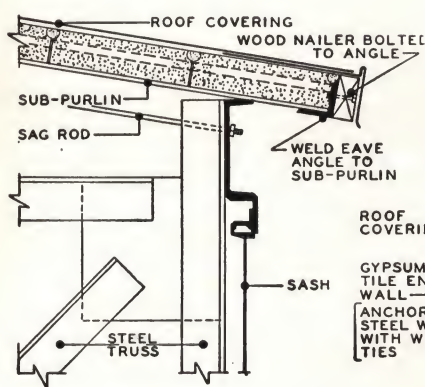
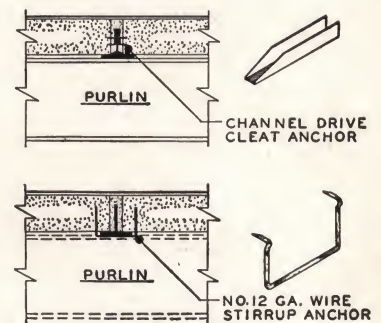


EAVES:

SCALE: 3/4" = 1'-0"

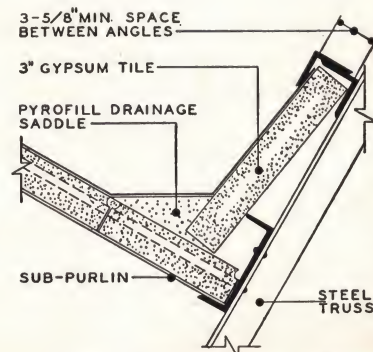
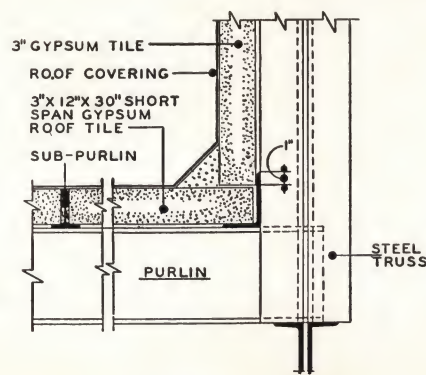
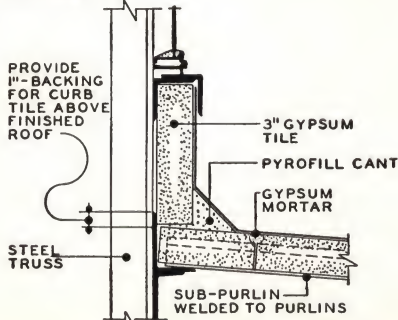


ANCHORAGE

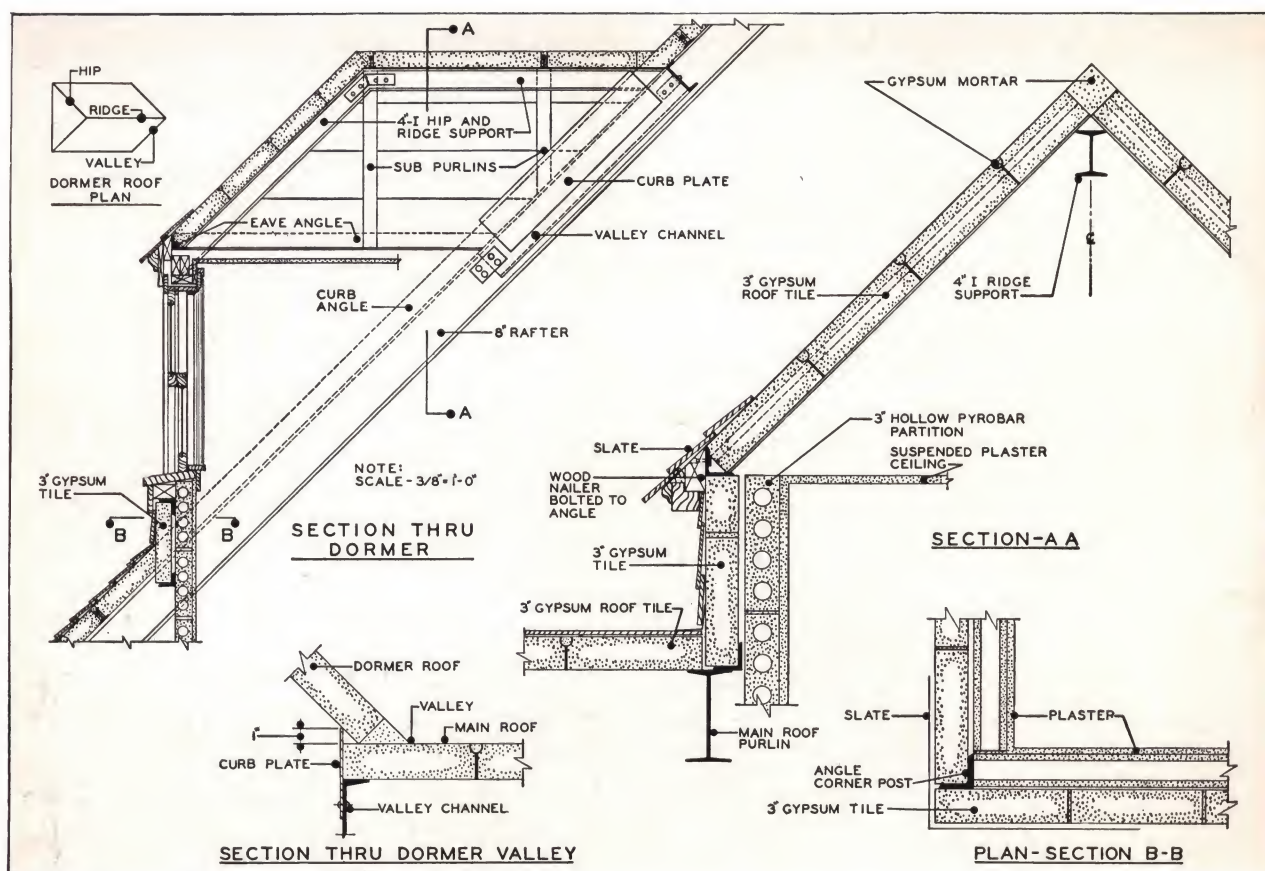


CURBS:

SCALE: 3/4" = 1'-0"



3" SHORT SPAN (NAILING TYPE) GYPSUM ROOF TILE



SPECIFICATIONS

SCOPE

Unless otherwise shown or specified, all roof areas are to receive 3" solid short span precast reinforced gypsum roof tile complete with steel sub-purlins and gypsum grouting mortar. All curbs, cants and saddles are to be included as shown or required.

MATERIALS

Sub-Purlins.—Steel sub-purlins to be [United States Gypsum Company's No. (178) (218) bulb tee] [standard structural tee sections of required section modulus.] All sub-purlins to have one coat of manufacturer's standard oil base paint. Sub-purlins to be cut to length so that ends occur over supports.

Roof Tile. Shall be 3" Short Span (Nailing Type) Gypsum Roof Tile, manufactured by United States Gypsum Company.

Grouting Mortar. To be United States Gypsum Company's Grouting Cement, sanded at the job site in the proportion of one part cement to two parts of clean, sharp sand, by volume.

Curbs. Shall be 3" solid precast Gypsum Tile, manufactured by United States Gypsum Company.

Cants and Saddles. To be PYROFILL* or STRUCTOLITE* gypsum fiber concrete, manufactured by United States Gypsum Company.

ERECTION

Sub-Purlins. Place steel sub-purlins across main roof purlins at 30 $\frac{3}{4}$ " o.c. Weld each sub-purlin to main purlins with one weld at each intersection, using a $\frac{3}{4}$ " long fillet weld on alternate sides of sub-purlins where accessible. All ends of sub-

purlins shall bear on roof supports.

Roof Tile. Place roof tile dry between sub-purlins with sides butted tightly together and with ends bearing equally on flanges. Cut tile to fit at all walls, curbs, ridges, hips, valleys and openings as required. Grout all joints from the top with gypsum grouting mortar. Fill flush to the top surface of the tile and cut off excess mortar. All roof areas to be left clean and free of debris, ready to receive the weatherproofing specified elsewhere.

Curbs. Install curbs as shown on drawings. Tile to be laid in gypsum cement mortar and anchored to steel framing as required.

Cants. Shall be accurately formed to a line.

Saddles, or drainage fills. Shall be placed as shown and left smooth to receive roof covering.

OPTIONAL INCLUSIONS

1. For eaves, rakes, etc. At all overhanging portions of roofs, such as eaves, etc., provide a 2 $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " eave angle, welded to sub-purlins or out-lookers to provide a solid stop for roof tile. Provide wood nailers, bolted to eave angles, where shown or required.

2. Where pitch of roof exceeds 45°, 3" Short Span Gypsum Roof Tile shall be secured to sub-purlins with special wire ties nailed into sides of adjacent tile and extending below and around the sub-purlin; or if bulb tee sub-purlins are used, steel wedges may be used in end joints between tile and web of sub-purlins. (See details on preceding page.) When pitch of roof exceeds 45°, consult nearest United States Gypsum sales office for recommendation on the application of slate, architectural tile, etc.

*Trademark Reg. U. S. Pat. Off.

TECHNICAL INFORMATION

ASPHALT **ROOFING**ASBESTOS
CEMENT **SIDING****United States Gypsum****For Building • For Industry**

Gypsum • Lime • Steel • Insulation • Roofing • Paint

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ASPHALT SHINGLES

USG* THICK-BUTT SHINGLES

DESCRIPTION

A three-in-one strip shingle with extra thickness in the portion exposed to the weather. The granules are embedded in a single moulded coating of asphalt mastic which bonds securely to the asphalt-saturated felt base—the exclusive USG “Monolithic Method.”

Surfaces: Plain or textured.

Size: 12" x 36" with two 3/8" wide cut-outs.

Solid Colors: Black, Red, Green.

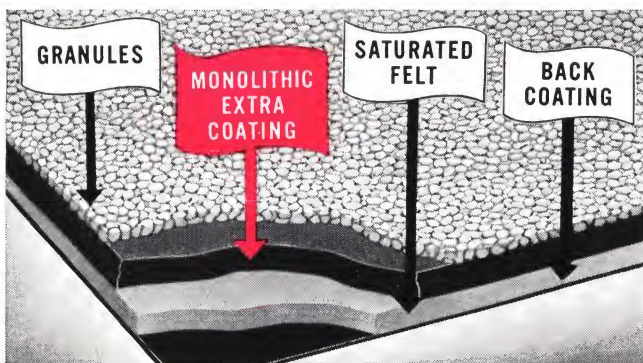
Blend: Briar Green, MAYFAIR GREEN*, Pompeian Red and Venetian Red.

Weight: 210 pounds per square.

FUNCTION AND UTILITY

FIRE RESISTANT—Carries class “C” label of Underwriters. Many insurance companies recognize that USG Thick-Butt Shingles lessen the threat of fire, and in some states a lower insurance rate is offered on this type of roof.

PROTECTION AGAINST THE ELEMENTS—USG Thick-Butt Shingles are so designed that the bulk of the protection is placed where exposed to the wear of the weather. The exposed portion of shingle is 33 per cent thicker and 50 per cent heavier than the unexposed portion. This roof better fortifies the building against snow, wind, rain and sun.



LONGER WEAR—The “Monolithic Method” of manufacture gives maximum protection to the felt, assuring long service. The life expectancy USG for Thick-Butt Shingles is considerably greater than for standard thickness shingles.

BEAUTY—The “Monolithic Method” of manufacture permits deep texturing resulting in a massive, rugged type of beauty with deep shadowing.

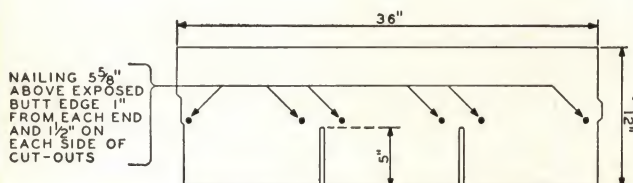
COST—USG Thick-Butt Shingle is not a premium shingle but is comparable in price to standard shingles of the same weight.

LIMITATIONS OF USE

For use on roofs having a rise of at least 4" to the horizontal foot.

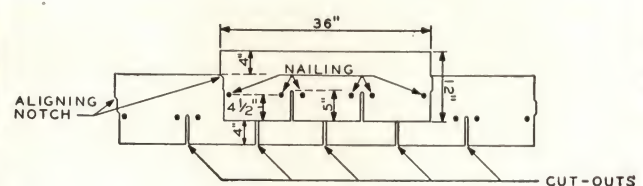
PRODUCT DATA AND APPLICATION METHODS

5" EXPOSURE—CONVENTIONAL METHOD:



| Head Lap | Exposure | Strips per Square | Bundles per Square | Approx. Wt. per Square |
|----------|----------|-------------------|--------------------|------------------------|
| 2" | 5" | 80 | 3 | 210 |

4" EXPOSURE—EXTRA PROTECTION METHOD:



| Head Lap | Exposure | Strips per Square | Bundles per Square | Approx. Wt. per Square |
|----------|----------|-------------------|--------------------|------------------------|
| 4" | 4" | 100 | 3.75 | 263 |

GLATEX* ASBESTOS CEMENT SIDING

DESCRIPTION

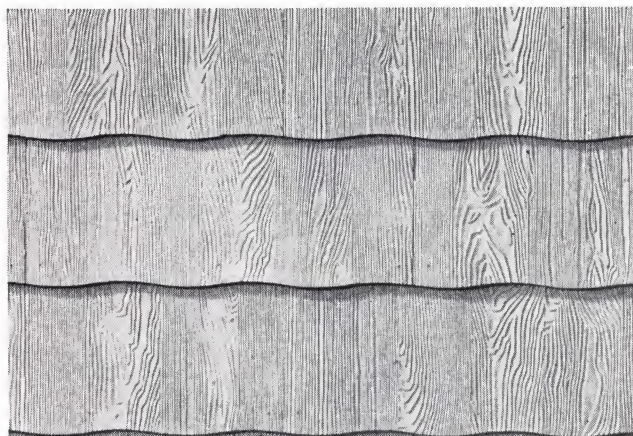
A siding material made of a combination of asbestos fibers and portland cement plus a baked-on mineral type coating, not unlike a vitrified enamel in appearance, instead of the ordinarily porous asbestos-cement surface. GLATEX Asbestos-Cement Siding is die cut and made with a wood-grain texture in either a straight-line or a wavy-line butt, $\frac{5}{32}$ " thick in units 12" x 27".

FUNCTION AND UTILITY

ADAPTABLE to both new construction and remodel construction.

CONVENTIONAL CONSTRUCTION—No special framing is required. It may be applied over wood, gypsum or insulation sheathing. See attachment methods on next page.

RESISTS MOISTURE AND DIRT—The special-coated surface, not unlike in appearance to a vitrified enamel, catches



No. 600—Wavy Butt GLATEX



No. 950—Clapboard GLATEX

less moisture and dirt than ordinary asbestos-cement surfaces. Stains do not readily adhere to the surface. Thus GLATEX siding retains its original freshness longer.

FIREPROOF—The combination of asbestos fiber and portland cement provides a material that will not burn and which helps protect framing against fire hazard.

ECONOMICAL—GLATEX siding never requires paint. It is easily and economically maintained and provides "life-long" service.

CLEANABLE—Surface grime can be cleaned from surface of GLATEX siding by simply washing with soap and water.

ATTRACTIVE—Indented wood-grain effect enhances beauty of GLATEX siding.

LARGE UNITS—The 27" long units mean fewer joints, faster application and tighter walls.

THE SMUDGE TEST



Apply dirty oil or grease



Wipes off without penetrating surface



Surface is restored—no stains remain

PRODUCT DATA

| No. 950 CLAPBOARD SIDING | | No. 600 WAVY BUTT SIDING SHINGLE | |
|-------------------------------|------------------------------|----------------------------------|------------------------------|
| Dimensions | 12" x 27" x $\frac{5}{32}$ " | Dimensions | 12" x 27" x $\frac{5}{32}$ " |
| Approximate Weight per Square | 178 Pounds | Approximate Weight per Square | 175 Pounds |
| Weather Exposure | 10½" | Weather Exposure | 10½" |
| Overlap | 1½" | Overlap | 1½" Maximum, 1⅛" Minimum |
| Finish | Wood-grain Texture | Finish | Wood-grain Texture |
| Color | Satin White | Color | Satin White |
| Shingles per square | 51 | Shingles per square | 51 |
| Shingles per bundle | 17 | Shingles per bundle | 17 |

*Trademark Reg. U. S. Pat. Off.

ASBESTOS-CEMENT SIDING

USG SPEED CLINCH FASTENERS FOR ATTACHMENT OF ASBESTOS-CEMENT SIDING TO GYPSUM SHEATHING

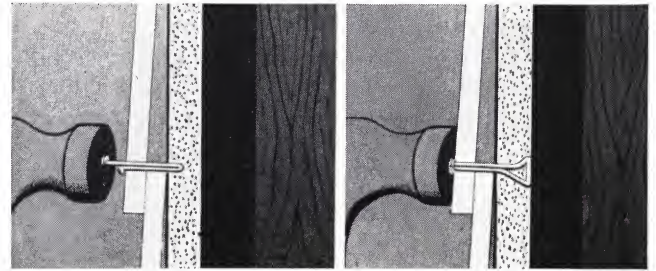
DESCRIPTION

A double shank and double head nail designed to secure asbestos cement siding to gypsum sheathing.

FUNCTION AND UTILITY

NAIL HOLDING POWER. Holds shingles tightly to gypsum sheathing. This is accomplished by the "mushrooming" of the nail shank within the sheathing when fully driven.

NO FURRING REQUIRED. When Speed Clinch Fasteners are used, furring strips are not required.



THREE FASTENERS PER SHINGLE driven in the face nail holes are all that are required. Top nailing is unnecessary.

EASILY APPLIED. Nailed in manner similar to conventional nailing—no special tools required.

NAILEX FASTENERS FOR ATTACHMENT OF ASBESTOS-CEMENT SIDING TO FIBER INSULATING SHEATHING OR GYPSUM SHEATHING



DESCRIPTION

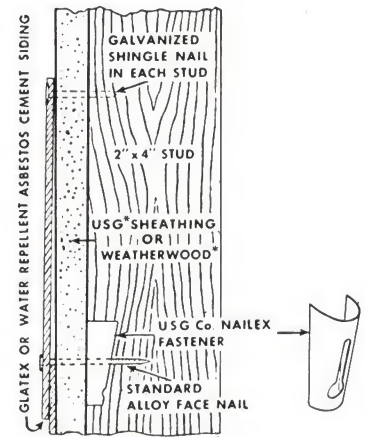
Wedge-shaped fasteners with slot to engage a standard 14 gauge $\frac{3}{16}$ " diameter button-head serrated face nail. No other materials or special tools required.

FUNCTION AND UTILITY

EASILY APPLIED. Nails are driven wherever holes occur in siding. Nailex fastener is slipped over shank of nail and wedged in place with fingers or pliers.

NO FURRING REQUIRED. Use of Nailex fasteners eliminates necessity for furring.

THREE FASTENERS per shingle — top nailing is unnecessary.



OTHER USG ROOFING AND SIDING PRODUCTS

ASPHALT SHINGLES

Standard Hexagon • Giant Dutch-Lap
Thatch • ARRO-LOCK*

ASPHALT ROLL ROOFING

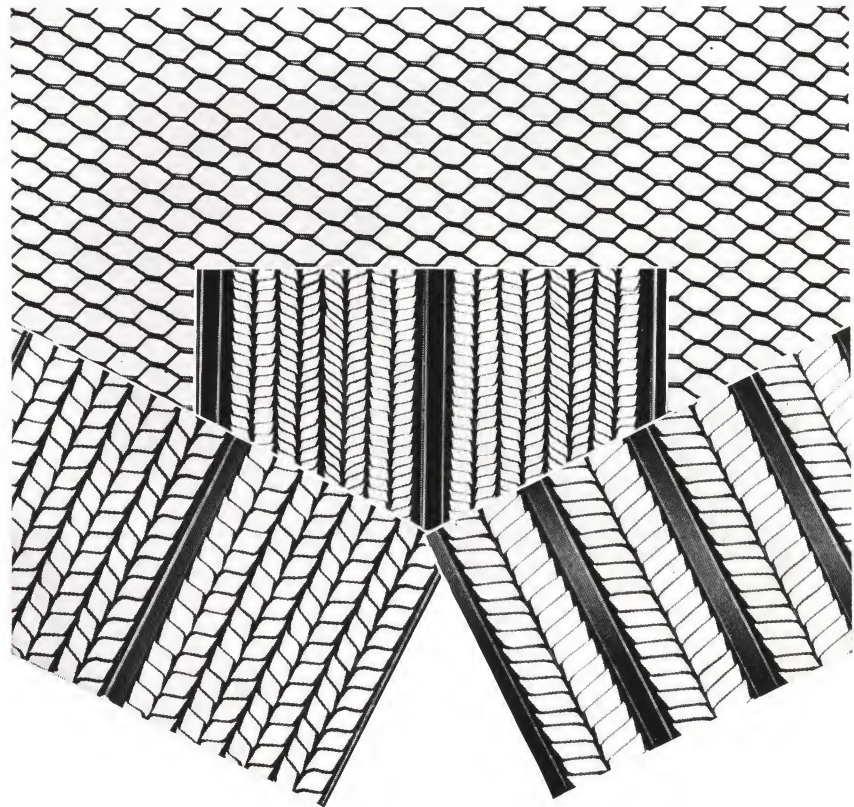
90 lb. Mineral Surface • 19" Selvedge Edge
Smooth Surface • Roll Brick Siding
Saturated Felts and Sheathings
Roof Coatings and Cements

"USG", "GLATEX", "WEATHERWOOD", "ARRO-LOCK" and "MAYFAIR GREEN" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "USG" identifies the particular asphalt roofing and gypsum sheathing; "GLATEX" identifies the particular asbestos cement siding; "WEATHERWOOD" identifies the particular fiber insulation board; "ARRO-LOCK" identifies a particular type of asphalt shingles; and "MAYFAIR GREEN" identifies a particular blend of asphalt shingles manufactured only by United States Gypsum Company.

TECHNICAL INFORMATION

METAL LATH

CORNER BEADS • CHANNELS
PARTITION SYSTEMS
RESILIENT SYSTEMS



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USG METAL LATH

DESCRIPTION

Metal lath is sheet steel that has been slit and expanded to form a multitude of small mesh openings.

It is made from rust-resisting copper alloy steel and is further protected by dipping the expanded sheet into black asphaltum paint. (Exception: 3.4 lb. diamond mesh when made from galvanized sheets.) For sizes and weights—See Technical Data below.

FUNCTION AND UTILITY

Metal lath is used as a plaster base and as centering for concrete.

FIRE RESISTANT—Metal lath and gypsum plaster provide a full one hour fire rating. (See page 6)

STRENGTH AND REINFORCING—Metal lath embedded within the plaster thickness provides tensile strength in a similar manner to steel reinforcement in concrete slabs, thus providing unusually high resistance to transverse impact. It decreases the hazards of cracks and failures due to structural movement of the frame.

"ROCKLATH", "TRUSSTEEL", "PYROBAR" and "BRIDJOINT" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "ROCKLATH" identifies the particular gypsum lath or plaster base; "TRUSSTEEL" identifies the particular truss designed stud; "PYROBAR" identifies the particular gypsum partition tile; "BRIDJOINT" identifies the particular metallic clips for attaching building boards and lath; all manufactured by United States Gypsum Company.

FLEXIBLE—Metal lath is readily shaped to ornamental contours to a degree not possible with other plaster bases.

QUALITY PLASTERING—The use of metal lath as a plaster base is conducive to good plastering because it makes the use of oversanded plaster in the scratch coat impractical.

LONG RANGE ECONOMY—Metal lath is intended for highest quality, fire-resistant, durable plastering with low maintenance costs.

Limitations of Use

1. The minimum weights of lath for spacing of supports listed in Technical Data must be observed.
2. The securing of metal lath to supports should be according to the specifications printed herein.
3. Only clean sand should be used for plastering. Unwashed salt water sand should not be used.
4. When abnormally high humidity, moisture or acid fumes are anticipated, our nearest sales office should be consulted.

CAUTION—Failure to observe these limitations may result in failure

USG METAL LATH TYPES

USG DIAMOND MESH LATH

A small mesh (approximately 11,000 meshes per yard) diamond pattern metal plastering base.

Size: 27" x 96".

Weights: 2.5 lbs. and 3.4 lbs. per square yard.

A general all-purpose lath. Best for ornamental, contour plastering. The small meshes conserve plaster and reduce droppings. Nationally available.

Limitations of Use

USG Expanded Metal STUCCOMESH is preferred as a stucco base.

USG 1/8" RIBLATH (Flat Riblath)

A herringbone mesh pattern, with 1/8" deep Z-shaped ribs running lengthwise of the sheet at 1 1/2" intervals.

Size: 24" x 96", 27" x 96".

Weights: 2.75 lbs. and 3.4 lbs. per square yard.

Stiffening ribs and herringbone pattern increase rigidity, thus permitting a wider spacing of supports or a saving in the weight of lath required. Particularly suitable for attachment by nailing. Its unusual rigidity permits the application of basecoat plaster, scratch and brown coats, in a "double-up" operation. Small meshes conserve plaster materials.

Limitations of Use

Its rigidity makes it unsuitable for contour plastering. Use DIAMOND MESH.

USG 3/8" RIBLATH

A herringbone pattern mesh with 3/8" deep V-shaped ribs running lengthwise of the sheet at 8" intervals, with inverted intermediate 1/8" ribs.

Size: 24" x 96".

Weights: 3.4 lbs. and 4.0 lbs. per square yard.

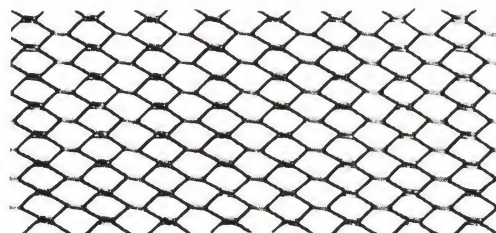
The heavy ribs provide exceptional rigidity. Used when supports are spaced more than 16" o.c. and not more than 24" o.c.

Desirable as a plaster base for heavy duty plastering.

Used as centering and reinforcement for concrete floor and roof slabs. See Technical Data, page 6.

Limitations of Use

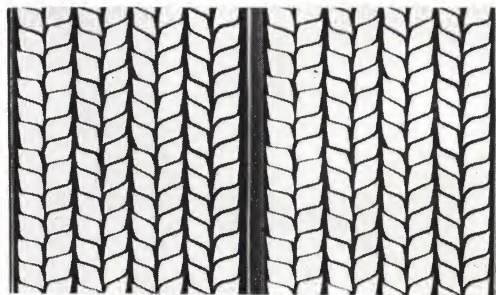
Its extreme rigidity makes 3/8" Riblath unsuitable for contour plastering. Use DIAMOND MESH Lath.



USG Diamond Mesh Lath



USG 1/8" Riblath



USG 3/8" Riblath

USG METAL LATH TYPES (Cont'd)

USG $\frac{3}{4}$ " RIBLATH

A herringbone pattern mesh with $\frac{3}{4}$ " deep V-shaped ribs lengthwise of the lath at 4" intervals.

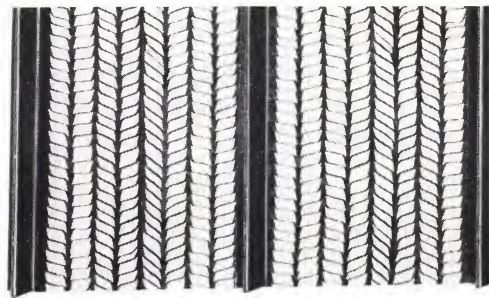
Sizes: 2' x 8', 2' x 10' and 2' x 12'.

Weights: .60 lb. and .75 lb. per square foot.

A structural lath, providing the dual functions of centering and reinforcement for concrete floor and roof slabs. (See Data on page 6.)

Limitations of Use

Not recommended as a plastering lath.



USG $\frac{3}{4}$ " Riblath

USG EXPANDED METAL STUCCOMESH*

A $1\frac{3}{8}$ " x $3\frac{1}{8}$ " diamond pattern mesh made of copper bearing steel, asphaltum painted. USG Stucco Furring nails are $1\frac{1}{2}$ " long and galvanized. They are equipped with a device which supports the mesh and spaces it $\frac{3}{8}$ " from the sheathing.

Special Functions

Designed as a base for exterior stucco, hand or pneumatically applied. The furring nails, equipped with $\frac{3}{8}$ " sliding spacers, provide for rapid erection of rigid furring and position the mesh for positive reinforcement of the stucco.

Limitations of Use

Should not be applied without using STUCCOMESH furring nails.

When used over sheathing other than wood, longer nails, providing a minimum penetration of $1\frac{1}{8}$ " into studs, should be substituted for the $1\frac{1}{2}$ " nails specified.



USG Expanded Metal STUCCOMESH

Specification

USG STUCCOMESH shall be applied with USG Stucco Furring nails spaced not to exceed 16" horizontally and 6" vertically. Adjacent sheets shall be lapped at sides and ends by at least one diamond mesh. End laps shall be made over supports and staggered. All laps between supports shall be tied every 6" with 18 gauge galvanized annealed tie wire.

USG LATHING ACCESSORIES

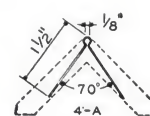
USG CORNER BEADS

USG corner beads should be used on all external plaster angles to provide: (1) plaster protection, (2) true and straight lines at angles and (3) grounds for plastering.

Lengths: 8', 9', 10' and 12'. Gauge of Steel: 26 gauge galvanized steel.

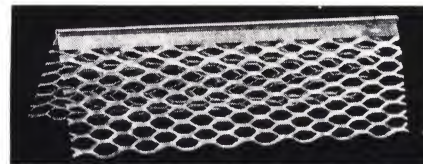
4-A FLEXIBLE CORNER BEAD

The general purpose corner bead. Economical and most generally used. By snipping flanges, this bead may be bent to any curved design (for archways, telephone niches, etc.). Made from 26 gauge galvanized steel.



1-A EXPANDED CORNER BEAD

Its wide expanded flanges are easily flexed. Preferred for irregular corners. Provides increased reinforcement close to nose of bead. Made from 26 gauge galvanized steel.



2-A SCALLOPED FLANGE CORNER BEAD

A perforated flange, rigid type bead with projecting scallops that provide good nailing for irregular corners. Made from 26 gauge galvanized steel.



*Trademark Reg. U. S. Pat. Off.

(See next page)

USG LATHING ACCESSORIES (Cont'd)

12-A WIDE FLANGE CORNER BEAD

Similar in size and shape to No. 1-A, but with perforated $2\frac{1}{2}$ " flanges. An exceptionally rigid bead. Made from 26 gauge galvanized steel.



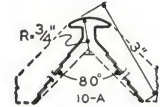
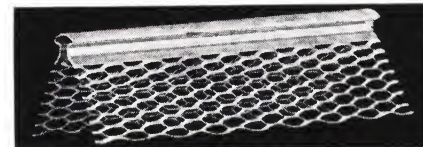
5-A BULL NOSE CORNER BEAD

A $\frac{3}{4}$ " radius bull nose bead with short flange. Used for rounded corners. It is secured to corners with No. 9-A Clips attached to flanges. Made from 26 gauge galvanized steel.



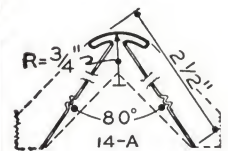
10-A EXPANDED BULL NOSE CORNER BEAD

A bull nose bead similar to above, but with $2\frac{1}{2}$ " wide expanded flanges. Especially suitable on irregular corners. Made from 26 gauge galvanized steel. (24 gauge on special order.)



14-A BULL NOSE CORNER BEAD

Similar to the No. 10-A above for the nose design, but with $2\frac{1}{2}$ " wide perforated flanges. Made from 26 gauge galvanized steel. (24 gauge on special order.)

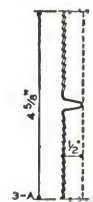
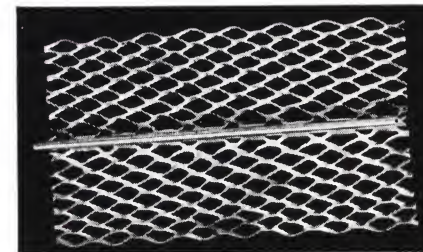


9-A CORNER BEAD CLIPS

A 3" clip for attachment of short flange beads where nailing or tying the flange to the corner construction is impractical. The "cut-outs" of the clip securely engage the flange of the bead with punched holes provided for nailing purposes. (not shown)

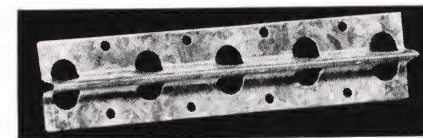
3-A EXPANDED BASE SCREED

Similar to 6-A, but with $2\frac{1}{2}$ " flexible expanded flanges for added reinforcement or for attachment to uneven surfaces. Made in 10 foot lengths from 26 gauge galvanized steel.



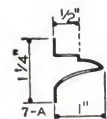
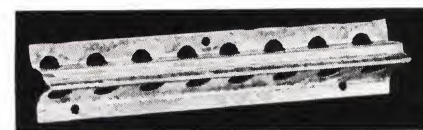
6-A PLAIN BASE SCREED

A flush type $\frac{1}{2}$ " ground (job shimmed for $\frac{3}{4}$ " grounds), used at the juncture of differing finishes; as between plaster and terrazzo surfaces. Made in 10 foot lengths only from 26 gauge galvanized steel.



7-A CURVED POINT BASE SCREED

For use where base or wainscot is to project beyond the plastered surface. Made for $\frac{1}{2}$ " plaster ground and 1" projection. Length 10 feet—26 gauge galvanized steel.



8-A PICTURE MOULD

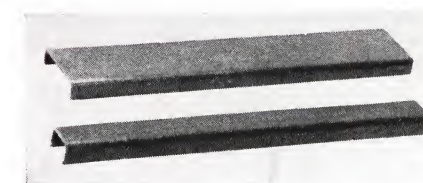
A concealed mould. Attached to lath and plastered flush to the notch opening. Grounds $\frac{1}{2}$ "—length 10 feet—26 gauge galvanized steel.



LATHING CHANNELS

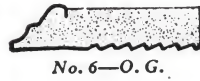
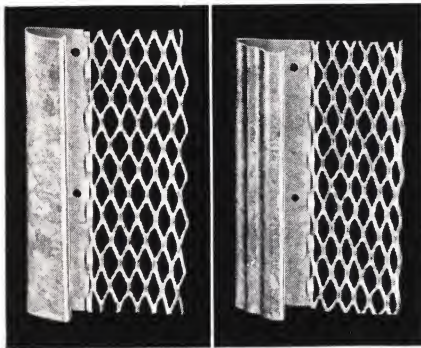
Strong, lightweight channel sections used for furring, suspended ceilings, partitions, ornamental lathing, etc. Sizes: $\frac{3}{4}$ " or $1\frac{1}{2}$ " deep, 16' or 20' lengths, Weights: $\frac{3}{4}$ ", 308 lbs. per M. Lin. ft., $1\frac{1}{2}$ ", 471 lbs. per M. Lin. ft. Made of 16 gauge steel, black asphaltum painted.

(See next page)



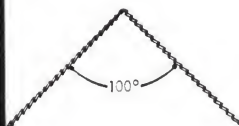
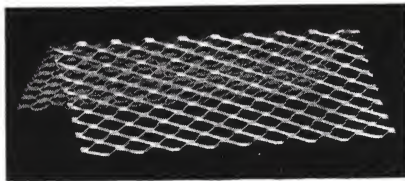
USG LATHING ACCESSORIES (Cont'd)

NO. 4 AND NO. 6 METAL CASING



Used as a plaster stop and ground at window and door openings where this function is not otherwise provided. Two styles available, No. 4 Quarter Round, or No. 6 O.G. (Old Gothic). Lengths 7', 8' and 10'. Plaster grounds $\frac{3}{4}$ " standard; $\frac{1}{2}$ " on order. Made from 24 gauge galvanized steel.

USG CORNERITE AND STRIPLATH



Cornerite is a 4" or 6" wide strip of 2.5 lb. DIAMOND MESH lath, copper alloy painted, bent lengthwise in the center, to form a 100° angle, length 96".

Striplath is a 3" wide strip of 2.5 lb. DIAMOND MESH lath, copper alloy painted, 96" long.

Function and Utility

Cornerite should be used on all internal plaster angles as corner reinforcement where metal lath is not lapped or carried around corners; over non-ferrous lath nailed rigidly to supports; over corners of masonry constructions. (Cornerite is optional in Resilient, BRIDJOINT* lathing system. If used it is secured to the lath, not the supports.)

Striplath is used as a plaster reinforcement over joints of non-metallic lathing bases. Sometimes used with perforated ROCKLATH* plaster base for ceilings requiring a 1 hour fire rating.

USG CEILING RUNNER

A specially designed steel angle for fastening to the ceiling in order to provide positive anchorage and alignment of $\frac{3}{4}$ " channels in either solid partition construction or exterior wall furring.

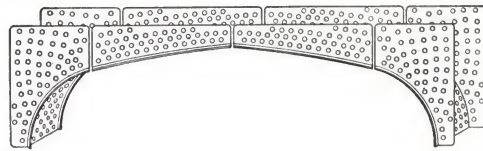
USG GALVANIZED TIE WIRE

A pliable, annealed wire for tying metal lath; 18 and 16 gauge coils. (8 gauge galvanized annealed coils available for hangers.)

ATTACHMENT CLIPS

Special wire clips designed for attachment of Riblath to top or bottom flanges ($1\frac{1}{2}$ " to $4\frac{5}{8}$ " widths) of steel joists.

USG METAL ARCHES



DESCRIPTION

USG Metal Arches are made of galvanized sheet metal, perforated for plaster keying. They are made in three styles: True Circle, Gothic and Elliptic, and in seven sizes. Many variations in size and shape may be obtained by combining different sections of different arches.

FUNCTION AND UTILITY

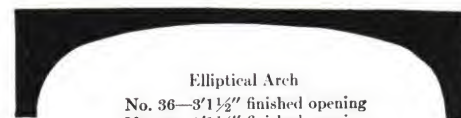
USG Metal Arches are equally suitable for new work or remodeling. They provide a plastering base of symmetry and uniformity that is quick and easy to install.

Metal Arches combine into one unit the plaster base, plaster grounds and corner bead otherwise required in making such arched openings. No special preparation of the rough opening is necessary. The metal arch sections fit perfectly over 2 x 4 studs and any type of lath, or over masonry of similar thickness. Special job conditions are easily handled.

THREE STYLES SEVEN SIZES



No. 33—2'7 $\frac{1}{2}$ " finished opening
No. 44—4'1 $\frac{1}{2}$ " finished opening

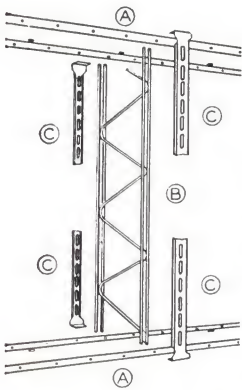


No. 36—3'1 $\frac{1}{2}$ " finished opening
No. 55—5'1 $\frac{1}{2}$ " finished opening
No. 66—5'10 $\frac{1}{2}$ " finished opening

TABLE OF ERECTION DETAILS

| Style of Arch | Width of Finished Opening | Dimension from Arch Base to Header | Spacing between Studs or Bucks (Rough Opening) |
|---------------|---------------------------|------------------------------------|--|
| No. 11 | 20" | 10" | 21 $\frac{1}{2}$ " |
| No. 22 | 31 $\frac{1}{2}$ " | 15 $\frac{3}{4}$ " | 33" |
| No. 33 | 31 $\frac{1}{2}$ " | 11 $\frac{3}{8}$ " | 33" |
| No. 36 | 37 $\frac{1}{2}$ " | 11" | 39" |
| No. 44 | 49 $\frac{1}{2}$ " | 12 $\frac{1}{2}$ " | 51" |
| No. 55 | 61 $\frac{1}{2}$ " | 13" | 63" |
| No. 66 | 70 $\frac{1}{2}$ " | 13" | 72" |

USG TRUSSTEEL* STUDS



DESCRIPTION

This is a truss design stud for the erection of hollow non-load bearing fire-proof partitions. Outer chords and diagonal struts are constructed of round rods. As shown in the sketch, the component parts are (A) 24 gauge top and bottom runner tracks, (B) 7 gauge rod studs spot welded at all contact points, (C) attachment shoes for connecting the studs to the runners.

Sizes—Consult technical data below.

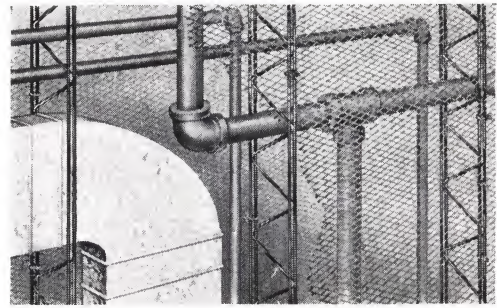
FUNCTION AND UTILITY

CONCEALS PIPES AND CONDUITS—The “hollow stud” structure permits concealment of pipes, conduits, air ducts, etc., within the finished wall. Diagonal struts are easily cut to accommodate large ducts.

LIGHT WEIGHT—The finished plastered partition weighs 13 to 17 pounds per square foot of partition, generally less than other partitions of equal thickness.

FIREPROOF—The gypsum plaster over USG Metal Lath protects the studs from “heat distortion,” giving a one hour fire rating.

STRONG—Strength of studs is derived from strategic use of metal in a truss design—not on bulk weight. Tests made by recognized authorities on panels of same size, indicated that TRUSSTEEL Studs withstood at least 30 per cent greater transverse loads before failure than 1½” steel channels similarly lathed and plastered.



ADJUSTABLE HEIGHT—Attachment shoes permit an upward adjustment up to 4” for varying ceiling heights.

ECONOMICAL, because—

- (a) Material cost is moderate.
- (b) Erection is speedy, only ordinary lather’s tools required.
- (c) Light weight generally permits partition location at any place without special structural framing.

LIMITATIONS

1. USG TRUSSTEEL Studs are designed for non-load bearing partitions only.
2. Partition heights should not exceed the maximum heights in technical data table below.
3. Stud spacing is determined by the type of lath. See spacings in technical data.

TECHNICAL DATA

| Stud Width | Finished (1) Wall Thickness | Maximum Partition Height | NATIONAL BUREAU OF STANDARDS FIRE RATINGS (2) | | Sound (5) Transmission Loss in Decibels |
|------------|--------------------------------|--------------------------------|--|---------|---|
| | | | (3) | (4) | |
| 3¼" | 4¾" | 16 Ft. | 1 hour | 2 hours | 36.9 |
| 4" | 5½" | 18 Ft. | 1 hour | 2 hours | 36.9 |
| 6" | 7½" | 20 Ft. | 1 hour | 2 hours | 36.9 |

Approximate plastered partition weight per square foot: 13 lbs. on ROCKLATH, 17 lbs. on Metal Lath.

Stud Lengths: 7' 0" to 20' 0" in increments of 3".

Runner Tracks: 3¼", 4" and 6" widths by 8' 2" long.

Notes:

1. Based on ¾" plaster thickness from face of stud. Mill work should be specified to fit these wall thicknesses.
2. Fire Ratings are as given for such partitions in National Bureau of Standards Report BMS-92.
3. Ratings are for ¾" thick gypsum plaster, sanded 1:2-1:2 applied over Metal Lath. Rating of plaster sanded 1:2-1:3 is 45 minutes for ¾" thickness and 1 hour for ⅞" thickness.
4. Ratings are for ⅞" thick neat gypsum plaster, or, 1" thick gypsum plaster sanded 1:½-1:½, applied over Metal Lath. Neat gypsum plaster 1" thick applied over Metal Lath is accorded a 2½ hour rating.
5. Sound Transmission Loss is as given in National Bureau of Standards Report BMS-17 for such partitions. Figures are for the average of 128 to 4086 cycles.

RECOMMENDED STUD SPACING

| Type of Lath | TRUSSTEEL Stud Spacing |
|------------------------------|---------------------------|
| 2.5 lb. Diamond Mesh Lath | 12 Inches |
| 3.4 lb. Diamond Mesh Lath | 16 Inches |
| 2.75 lb. ⅛" Riblath | 16 Inches |
| 3.4 lb. ⅛" Riblath | 19 Inches |
| 3.4 lb. ⅜" Riblath | 24 Inches |
| 4.0 lb. ⅜" Riblath | 24 Inches |
| Plain or Perforated ROCKLATH | 16 Inches |

USG METAL LATH DATA

TECHNICAL DATA

| Type of Lath | Weight per Square Yard | Type of Steel | Size Sheets | Maximum Allowable Spacings | | | | |
|----------------|------------------------|------------------|----------------|--------------------------------------|------------------|------------|---------------------|---------|
| | | | | Vertical Supports | | | Horizontal Supports | |
| | | | | Wood | Metal | | Wood or Concrete | Metal |
| | | | | | Solid Partitions | Others (5) | | |
| Diamond Mesh | 2.5 lb. | Copper Alloy (1) | 27"x96" | 16" | 16" | 12" | (4) | (4) |
| Diamond Mesh | 3.4 lb. | Copper Alloy | 27"x96" | 16" | 16" | 16" | 16" | 13 1/2" |
| Diamond Mesh | 3.4 lb. | Galvanized (2) | 27"x96" | 16" | 16" | 16" | 16" | 13 1/2" |
| 1/8" Z-Rib | 2.75 lb. | Copper Alloy | 27"x96" | 16" | 16" | 16" | 16" | 12" |
| 1/8" Z-Rib | 3.4 lb. | Copper Alloy | 27"x96" | 19" | 24" | 19" | 19" | 19" |
| 3/8" Rib | 3.4 lb. | Copper Alloy | 24"x96" | 24" | 24" | 24" | 24" | 24" |
| 3/8" Rib | 4.0 lb. | Copper Alloy | 24"x96" | 24" | 24" | 24" | 24" | 24" |
| STUCCOMESH (3) | 1.8 lb. | Copper Alloy | 48"x99" | 16" (3) | | | | |
| STUCCOMESH | 3.6 lb. | Copper Alloy | 48"x99" | 16" (3) | | | | |
| 3/4" Rib Lath | | Copper Alloy | 10'x12', 2'x8' | See table for 3/4" Riblath, page 15. | | | | |

All metal lath (except galvanized) is painted with a rust-inhibitive black asphaltum paint.

Notes (1) Copper alloy lath contains from 0.2% to 0.25% pure copper.

(2) Galvanized lath is cut from galvanized sheets.

(3) STUCCOMESH generally applied over exterior sheathing.

(4) Not recommended, except for fireproofing of steel shapes.

(5) Including vertical furring.

FIRE TEST DATA

Panel Type

| Construction | Type Base | Plaster and Aggregate | Thickness | Rating and Reference |
|--------------------------|---------------------|--|---------------|----------------------|
| PARTITIONS | | | | |
| Wood Frame | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:3 | 3/4" | 45 Minutes (1) |
| Wood Frame | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:2 | 3/4" | 1 Hour (1) |
| Wood Frame | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:3 | 7/8" | 1 Hour (1) |
| Wood Frame | Expanded Metal Lath | Gypsum Wood Fiber | 3/4" | 1 1/2 Hour (1) |
| Wood Frame | Expanded Metal Lath | Portland Cement-Sand, 1:2, 1:3 | 3/4" | 30 Minutes (1) |
| Wood Frame | Expanded Metal Lath | Portland Cement-Sand, 1:2, 1:3 | 7/8" | 45 Minutes (1) |
| Wood Frame | Expanded Metal Lath | Portland Cement-Lime-Sand, 1:2:8, 1:2:10 | 3/4" | 30 Minutes (1) |
| Wood Frame | Expanded Metal Lath | Gypsum-Vermiculite 100:2 1/2, 100:3 1/2 | 3/4" | 1 Hour (1) |
| Solid | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:2 | 2" | 1 Hour (3) |
| Solid | Expanded Metal Lath | Gypsum Wood Fiber | 2 1/4" | 2 Hour (1) |
| TRUSSTEEL Studs | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:3 | 3/4" | 45 Minutes (1) |
| TRUSSTEEL Studs | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:2 | 3/4" | 1 Hour (1) |
| TRUSSTEEL Studs | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:3 | 7/8" | 1 Hour (1) |
| TRUSSTEEL Studs | Expanded Metal Lath | Gypsum Wood Fiber | 7/8" | 2 Hour (1) |
| CEILINGS | | | | |
| Wood Frame (A) | Expanded Metal Lath | Gypsum Sand, 1:2, 1:3 | 3/4" | 1 Hour (1) |
| Steel Joists (B) | Expanded Metal Lath | Gypsum-Sand, 1:2, 1:3 | 3/4" | 2 Hour (1) |
| Steel Joists (B) | Expanded Metal Lath | Gypsum-Vermiculite, 100:2, 100:3 | 3/4" | 3 Hour (1) |
| Steel Joists (B) | Expanded Metal Lath | Gypsum Wood Fiber | 1" | 3 Hour (1) |
| Steel Joists (B) | Expanded Metal Lath | Gypsum-Vermiculite, 100:2, 100:3 | 1" | 4 Hour (1) |
| Cellular Steel Floor (C) | Expanded Metal Lath | Gypsum Wood Fiber | 1" | 4 Hour (1) |
| Cellular Steel Floor (C) | Expanded Metal Lath | Gypsum-Vermiculite, 100:2, 100:3 | 1" | 4 Hour (1) |
| Suspended Channel (D) | Expanded Metal Lath | Gypsum-Vermiculite, 100:2 1/2, 100:3 1/2 | 1" | 4 Hour (2) |
| COLUMNS | | | | |
| Steel | Expanded Metal Lath | Gypsum-Sand, 1:3, 1:3 | 3/4" | 1 Hour (1) |
| Steel (E) | Expanded Metal Lath | Gypsum-Sand, 1:3, 1:3 | 3/4" and 3/4" | 2 1/2 Hour (1) |
| Steel (F) | Expanded Metal Lath | Gypsum-Vermiculite, 100:2 1/2, 100:3 1/2 | 1" | 3 Hour (2) |

(1) National Bureau of Standards.

(2) Underwriters' Laboratories.

(3) Nationally recognized fire testing laboratory—name on request.

(A) Lath applied with 1 1/2" 11 gauge, 7/16" head barbed roofing nails, 6" o.c.

(B) 2 1/2" reinforced concrete slab on Riblath or 2" precast gypsum tile above.

(C) Ceiling suspended 9" or more below floor slab.

(D) Incombustible construction above.

(E) Two layers of metal lath with 3/4" air space between.

(F) Lath furred 1 1/4" from column with space between lath and flanges filled with plaster.

SOUND TRANSMISSION LOSS—PARTITIONS

2 x 4 wood studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.

39.2 decibels (1)

3 1/4" TRUSSTEEL Studs; metal lath; scratch and brown coats of gypsum plaster, smooth white coat on both sides.

36.9 decibels (1)

2" solid metal lath and gypsum plaster smooth white coat on both sides.

37.6 decibels (1)

(1) National Bureau of Standards—average 128 to 4096 cycles.

METAL LATH AND LATHING SPECIFICATIONS

(Paragraphs A, B, and C are recommended as basic requirements for all metal lathing specifications. Paragraphs D-1, D-2, etc., apply to the erection of lath for various constructions and only those applicable to the job should be included.)

A. SCOPE

Unless otherwise indicated, all lathing and furring shall be of metal as herein described. *(Or enumerate the areas.)*

B. MATERIALS

Metal lath shall be USG Metal Lath manufactured by United States Gypsum Company, made from copper alloy steel sheets and shall be given a protective coating of rust-inhibitive paint after fabrication.

Where galvanized metal lath is required, it shall be 3.4 DIAMOND MESH lath.

The weight of metal lath shall be not less than that required by the current edition of The American Standards Association's "Standard Specifications for Gypsum Plastering," or the printed specifications of the manufacturer for the various spacings of supports.

Metal plastering accessories such as corner beads, base screeds, concealed picture moulds, metal casings, etc., shall be formed of galvanized steel sheets, not less than 26 gauge and manufactured by United States Gypsum Company.

Channels for furring shall be cold rolled steel channels having a protective coating of rust-inhibitive paint, manufactured by United States Gypsum Company. Channels shall not exceed the limitations of span as set forth in current issue of A.S.A. specifications or the manufacturer's printed limitations.

Metal studs shall be TRUSSTEEL studs, manufactured by United States Gypsum Company, formed with not less than 7 gauge wire and shall be given a protective coating of rust-inhibitive paint. Stud sizes shall be as indicated on the drawings.

Tie wire shall be 18 gauge soft annealed galvanized tie wire, unless otherwise indicated. Cornerite and Striplath shall be manufactured from 2.5 lb. DIAMOND MESH lath, copper alloy, having a coating of rust-inhibitive paint and manufactured by United States Gypsum Company.

C. ERECTION OF METAL LATH

Metal lath shall be applied with the long dimension of the sheet across the supports; Riblath with ribs against the supports.

The ends of all lath shall be lapped not less than 1" and the laps shall occur over the supports.

The sides of DIAMOND MESH Lath shall be lapped not less than $\frac{1}{2}$ ". The sides of Riblath shall be lapped by nesting outside ribs. Side laps shall be secured to every support unless otherwise specified, and shall be wire-tied between supports not to exceed 9" intervals.

All metal lath shall be started at one support away from the corner and be bent into the corner and carried on to the abutting wall to avoid a joint in the corner; provided that where $\frac{3}{8}$ " Riblath is used, it shall be butted into the corners and Cornerite shall be applied over the abutting lath and wired at 6" intervals along each edge in corners; Cornerite shall be tie-wired along the edge only, not in the corner. All metal lath shall be placed so that the lower sheet overlaps the upper.

Corner beads, base screeds, picture moulds, etc., shall be positioned by securely wiring to the metal lath, at not less than 12" intervals. Attachment to masonry or other solid construction shall be secured by nailing at intervals of not less than 12". $\frac{1}{2}$ " concrete stub nails shall be used for attachment to concrete. Wood grounds shall be set true to line to provide not less than $\frac{5}{8}$ " thickness of plaster over the metal lath and securely wired or nailed into place.

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS

D-1. Nailing to wood supports. Metal lath shall be secured to framing at intervals not to exceed 6" o.c. by one of the following methods:

For side walls, 4d common nails driven to $\frac{3}{4}$ " penetration and bent over to engage at least 3 strands of DIAMOND MESH lath or a rib of Riblath; 1" roof nails, $\frac{7}{16}$ " head, driven home to engage at least 2 strands of DIAMOND MESH or through the rib of Riblath; 1" 14 gauge wire staples, driven home without crushing the lath strands and engaging at least

2 strands of DIAMOND MESH lath or the rib of Riblath; except that $\frac{3}{8}$ " Riblath shall be secured with nails or staples having sufficient length to engage the rib and provide a $\frac{3}{4}$ " minimum penetration.

DIAMOND MESH and $\frac{1}{8}$ " Riblath shall be secured to ceiling framing with $1\frac{1}{2}$ " 11 gauge barb roofing nails with $\frac{7}{16}$ " head, to engage at least 2 strands of DIAMOND MESH or through the rib of $\frac{1}{8}$ " Riblath. $\frac{3}{8}$ " Riblath shall be secured with nails or staples that provide at least $1\frac{3}{8}$ " penetration.

D-2. Metal lath tied and nailed to joists. (Recommended where undue vibration is expected and for additional safety.)

16d common nails spaced 24" or 27" o.c. depending upon width of lath, shall be driven horizontally through alternate joists at least 2" above the lower edge; the point and head to

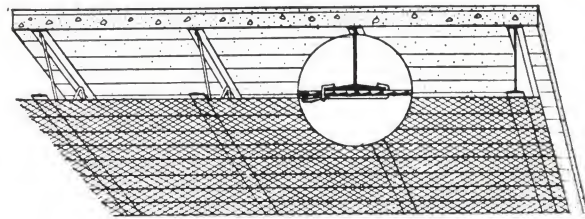
project equally from the sides of joist.

Metal lath shall be secured to wood joists in the manner described for Nail-on work, but in addition, the metal lath side laps shall be secured to the nails with 2 strands of 18 gauge tie wire, providing at least 3 twists around the lath.

METAL LATH AND LATHING SPECIFICATIONS

SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (cont.)

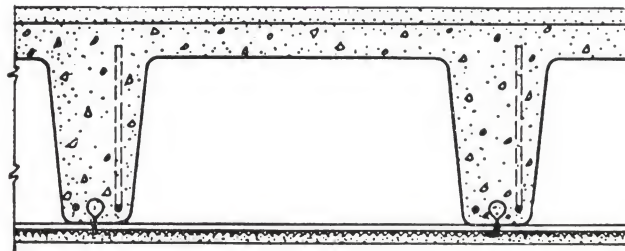
D-3. Metal lath secured to steel joists. Metal lath shall be secured to the lower chord of steel joist with 2 strands of 16 gauge tie wire or 4 strands of 18 gauge tie wire at intervals not to exceed 6" o.c. or with special galvanized attachment clips. Free ends of tie wire shall be given at least 3 twists.



D-4. Metal lath attached to rib concrete construction. Hangers for attaching metal lath directly to underside of concrete ribs (approximately 25" on centers) shall be placed in forms before concrete is poured and shall consist of hairpin, hook, loop hangers or other inserts and shall be provided with a loop or similar deformation for embedment in the concrete. Hangers shall be not less than 14 gauge galvanized annealed wire when twisted as in tie wire and not less than 10 gauge galvanized wire when struck over to support the lath. Spacing of hangers shall not exceed 5" along bottom of ribs.

Where ribs are spaced more than 25" on centers, 12 gauge galvanized wire hangers shall be placed through the center of the top surface of the forms at 36" centers and looped to engage the concrete. These hangers shall support $\frac{3}{4}$ " cold rolled channels running parallel to and between ribs.

Metal lath shall be secured to the concrete ribs by twisting the 14 gauge hangers as for tie wire or by clinching 10 gauge hangers. For ribs spaced more than 25" on centers, lath shall also be tied to channels with 2 strands of 18 gauge tie wire at intervals not to exceed 6".



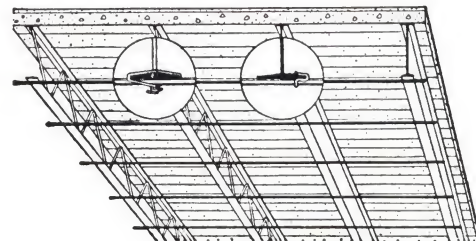
D-5. Furred ceiling on wood joists. 16d common nails, spaced to conform to spacing of furring members, shall be driven horizontally through each joist at least 2" above the lower edge; the point and head to project equally from the side of joist.

Channel or rod furring shall be attached, at right angles to

joists, flush against the bottom edges by securely wire-tying the furring to each nail with not less than 4 strands of 18 gauge tie wire, saddle-tied. Metal lath shall be attached to the steel furring with tie wires at intervals not to exceed 6".

D-6. Furred ceiling on steel joists. Furring members shall be $\frac{3}{4}$ " cold rolled channels and shall not exceed a spacing of (select spacing from table, page 9), and shall be erected at right angles to the steel joists. They shall be securely attached to the bottom chords with 2 strands 16 gauge or 4 strands 18 gauge galvanized wire or other approved attachment of equal strength.

Metal lath shall be attached to steel furring with wire ties at intervals not to exceed 6".



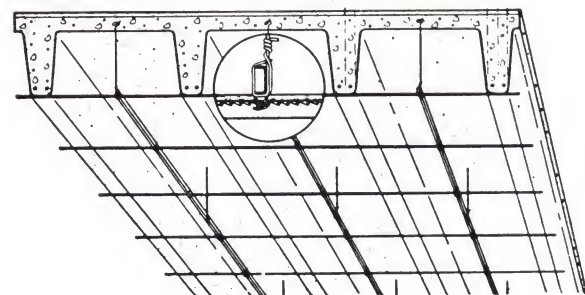
D-7. Furred ceiling on rib concrete construction. For concrete ribs centered at approximately 25", channel runners shall be supported against bottom of ribs by hangers of two 14 gauge galvanized wires, or other hangers of equal strength with looped ends embedded at least 2" within the concrete. Hangers shall be placed in forms before concrete is poured and spaced 36" on centers, to engage $\frac{3}{4}$ " channels running parallel to the ribs. Hangers shall be securely saddle-tied or wrapped around the channels.

Cross furring members shall be saddle-tied to the channel runners with 2 strands of 16 gauge galvanized tie wire at each intersection.

Metal lath shall be secured to the cross furring with tie wires at intervals not to exceed 6".

For concrete rib spacings greater than 25" on centers hangers

shall be two strands of 12 or one strand of 10 gauge galvanized wire supporting not more than 12 sq. ft.; two 11 gauge or one 8 gauge galvanized wire supporting not more than 16 sq. ft. of ceiling area.



METAL LATH AND LATHING SPECIFICATIONS

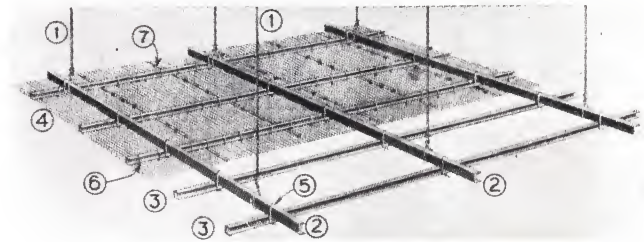
SUPPLEMENTARY SPECIFICATIONS FOR SPECIFIC APPLICATIONS (Cont.)

D-8. Suspended metal lath ceilings. Hangers (1) shall be No. 8 gauge galvanized wire, $\frac{3}{16}$ " round mild steel rods or 1" x $\frac{3}{16}$ " flat mild steel straps; spaced not to exceed 4' both directions; and shall support no more than 16 square feet of ceiling area. The use of special inserts may be used subject to the architect's approval.

Hangers shall be of ample length. Hangers (without inserts) shall be secured to steel reinforcement in concrete with cinder aggregate and shall be either secured to steel reinforcement or looped and embedded 2 inches in concrete with other types of aggregates.

1 $\frac{1}{2}$ " cold rolled channels (2) shall be attached to wire or rod hangers by means of a saddle tie, or 3 twists of hanger around the channel. In lieu of wire or rod hangers, flat steel hangers shall be secured to runner channels and inserts with $\frac{3}{8}$ " diameter bolts, the punched hole to be not less than $\frac{3}{8}$ " from ends of hanger. Runner channels shall be placed true and level and properly positioned for the indicated ceiling height.

$\frac{3}{4}$ " furring channels (3) shall be securely saddle-tied to the 1 $\frac{1}{2}$ " runner channels by 2 strands of 16 gauge tie wire (5) at each intersection.



Metal lath (4) shall be secured to the furring channels by tie wires (6) at intervals not to exceed 6". Side laps shall be wire-tied (7) between supports at intervals not exceeding 9". The spacing of the furring channels shall be (*select from table below*) and the weight of lath shall be (*select type and weight from table on page 6*).

Where hangers support more than 16 sq. ft. but not more than 25 sq. ft., use 1" x $\frac{3}{16}$ " flats spaced not more than 5' o.c. Main furring runners shall be not less than 2" hot rolled channels.

D-9. Metal lath vertical furring.

Attachments shall consist of nails driven securely into concrete or into masonry joints, or short pieces of $\frac{3}{4}$ " channels used as anchors driven into masonry joints. They shall be spaced not to exceed two feet on center, horizontally, and in accordance with the spacing of horizontal channels, vertically, and shall project a proper distance from the face of the wall to permit ties to be made.

Note: Where damp-proofing has been damaged, in installation of attachments, it shall be pointed with the same material before proceeding with the installation of the furring.

Horizontal members shall be not less than $\frac{3}{4}$ " cold-rolled channels. They shall be spaced not to exceed 4'6" on center with the lower and upper channels not more than 6" from the floor and ceiling, respectively, and not less than $\frac{1}{4}$ " from the face of the wall. They shall be securely tied to attachments

with 3 strands of 18 gauge galvanized soft annealed wire, or equivalent devices.

Vertical members shall be not less than $\frac{3}{4}$ " cold-rolled channels. They shall be spaced (*specify according to table below*). They shall be securely saddle-tied to horizontal members with 3 loops of 18 gauge galvanized soft annealed wire, or equivalent devices, at each crossing, and securely anchored to the floor and ceiling construction. Where furring is a considerable distance from the face of the wall, channel braces to the wall shall be provided approximately 2 feet on center, and, where the height exceeds 16 feet, special truss bracing shall be provided to prevent concentration of load on the floor construction.

Note: Special devices which are the equivalent of, or better than, the nail or channel attachments may be used in lieu thereof.

SIZE AND SPACING OF FURRING MEMBERS

| Spacing of Main Runners (Also Steel Joists) | Size and Type of Cross Furring | Maximum Spacing of Furring |
|--|---|----------------------------|
| Up to 2 Feet | $\frac{1}{4}$ " Pencil Rods or $\frac{3}{4}$ " Channels | 12" |
| Up to 2 Feet | $\frac{3}{8}$ " Pencil Rods or $\frac{3}{4}$ " Channels | 19" |
| Up to 2 Ft. 6 In. | $\frac{3}{8}$ " Pencil Rods or $\frac{3}{4}$ " Channels | 12" |
| Up to 3 Feet | $\frac{3}{4}$ " Cold Rolled Channels | 24" |
| Up to 3 Ft. 6 In. | $\frac{3}{4}$ " Cold Rolled Channels | 19" |
| Up to 4 Feet | $\frac{3}{4}$ " Cold Rolled Channels | 16" |

See Technical Data, page 6, for type and weight of lath.

2" SOLID METAL LATH AND PLASTER PARTITION

DESCRIPTION

A non-load bearing partition of metal lath, channels and plaster that finishes to an overall thickness of 2".

FUNCTION

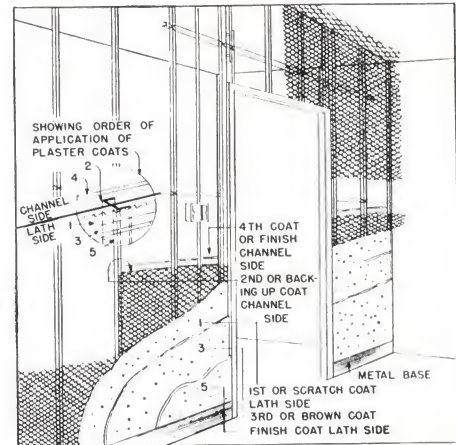
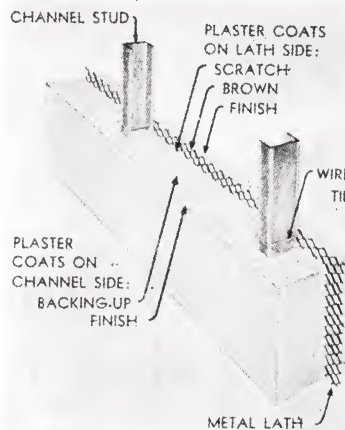
Space saving. Two-inch partitions save as much as 8 per cent of floor area over more conventional partitions, thus increasing the rentable or usable space.

Light weight. Eighteen pounds per partition square foot. Compared to more conventional partitions there is a dead load saving of as much as 30 per cent. Saves structural steel.

Fire resistance. Accorded a one hour fire rating by tests conducted by a nationally recognized fire testing laboratory (name on request). See table of fire ratings on page 6.

Crack resistance. Metal lath as a steel reinforcing, provides structural strength. Such partitions have performed remarkably well when subjected to earthquakes and explosions.

Sound transmission rating. 37.6 decibel transmission loss (average of 128 to 4096 cycles) as given in National Bureau of Standards Report BMS-17.



TECHNICAL DATA

| Height of Partition | Thickness of Partition | Size of Channel Stud | Permissible Length of Partition | Spacing of Studs | Lath Recommended |
|---------------------|------------------------|----------------------|---------------------------------|------------------|-----------------------|
| Up to 12' | 2" | 3/4" | No Limitation | 16" | 2.5 lb. Diamond Mesh |
| Up to 14' | 2" | 3/4" | 24 Ft. | 16" | 3.4 lb. Diamond Mesh |
| Up to 16' | 2 1/4" | 3/4" | 32 Ft. | 16" | 2.75 lb. 1/8" Riblath |
| Up to 18' | 2 1/2" | 3/4" | 27 Ft. | 24" (1) | 3.4 lb. 1/8" Riblath |
| Up to 20' | 2 3/4" | 3/4" | 30 Ft. | 24" | 3.4 lb. 3/8" Riblath |
| Up to 24' | 3" | 1 1/2" | 36 Ft. | 24" | 4.0 lb. 3/8" Riblath |
| Up to 30' | 3 1/2" | 1 1/2" | 30 Ft. | | |

(1) This stud spacing permissible for partition heights not exceeding 16 feet. For greater heights, permanent horizontal stiffener channels must be secured to channel side of partition every 6 feet vertically, or spacings shall be reduced 25 percent.

SPECIFICATIONS

MATERIAL

Channel studding shall be not less than 3/4" cold rolled channels and metal lath shall be (as selected from table above), manufactured by United States Gypsum Company.

LATHING

Contractor shall make accurate location layout of partitions according to plan. Channel studding shall be spaced (as selected from table above), and attached to the floor and ceiling with USG Stud Shoes and Ceiling Runner, or by other approved attachments or methods.

Where two-piece studs are necessary, they shall be spliced within 2 feet of ceiling by lapping not less than 8", with flanges interlocked and securely wired in at least two places not less than 6" nor more than 12" apart.

A double channel stud, continuous from floor to ceiling, shall be used adjacent to and at each side of door bucks. Where metal door bucks are used, the double channel stud shall be wire-tied to bucks in a secure manner. Where wood bucks are used, two 8d nails shall be driven, in pairs, into the wood buck,

at intervals of 2 feet, beginning 9" above floor and the double channel studs securely wire-tied to the nails.

A horizontal reinforcing (1/8" to 1 1/4" flat iron or 3/8" diameter rod) shall be attached 6" or 8" above top of door to the channel side and extend continuously past the double stud and just beyond the first single stud at each side. This reinforcement shall be saddle-tied to each vertical stud it crosses.

Also include GENERAL SPECIFICATIONS, B, C, AND D.

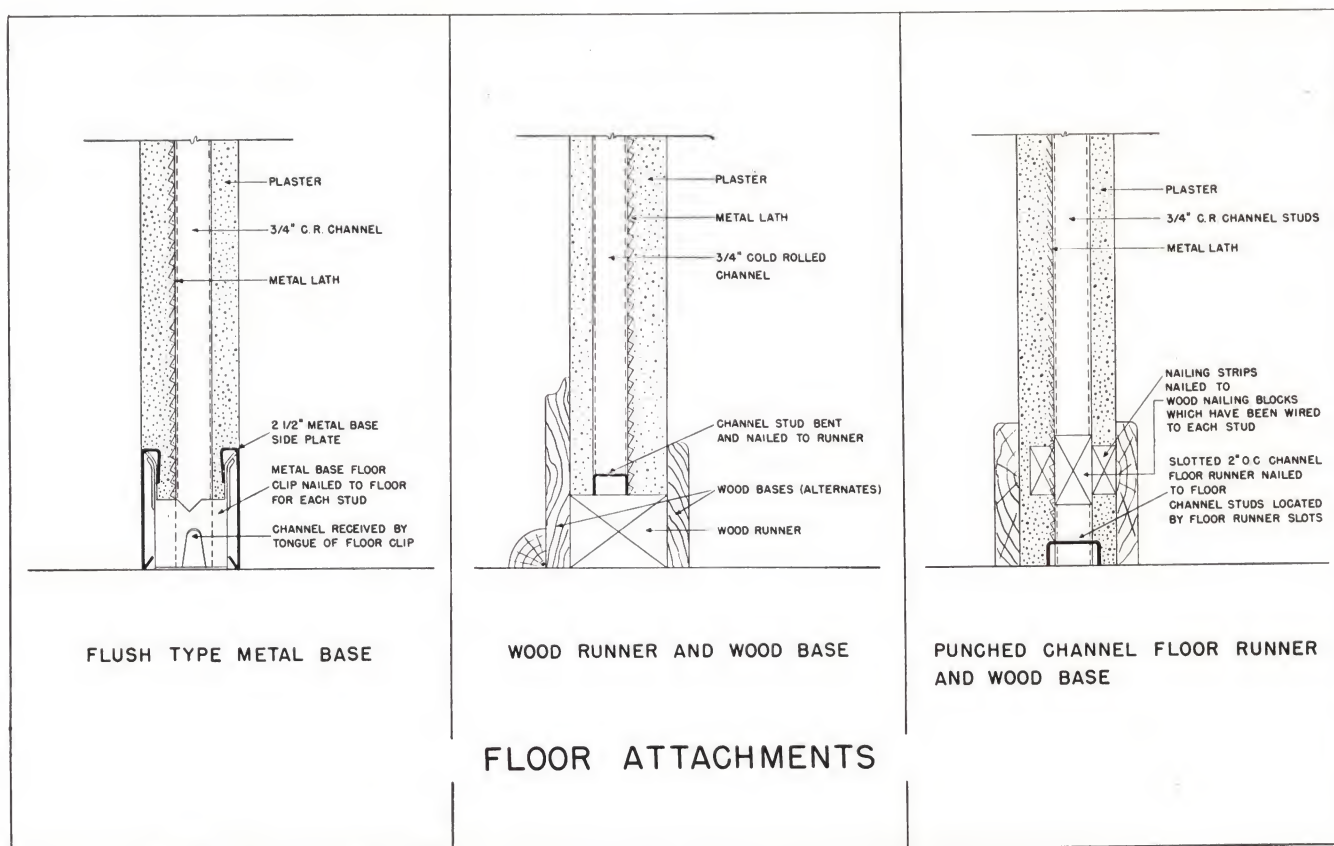
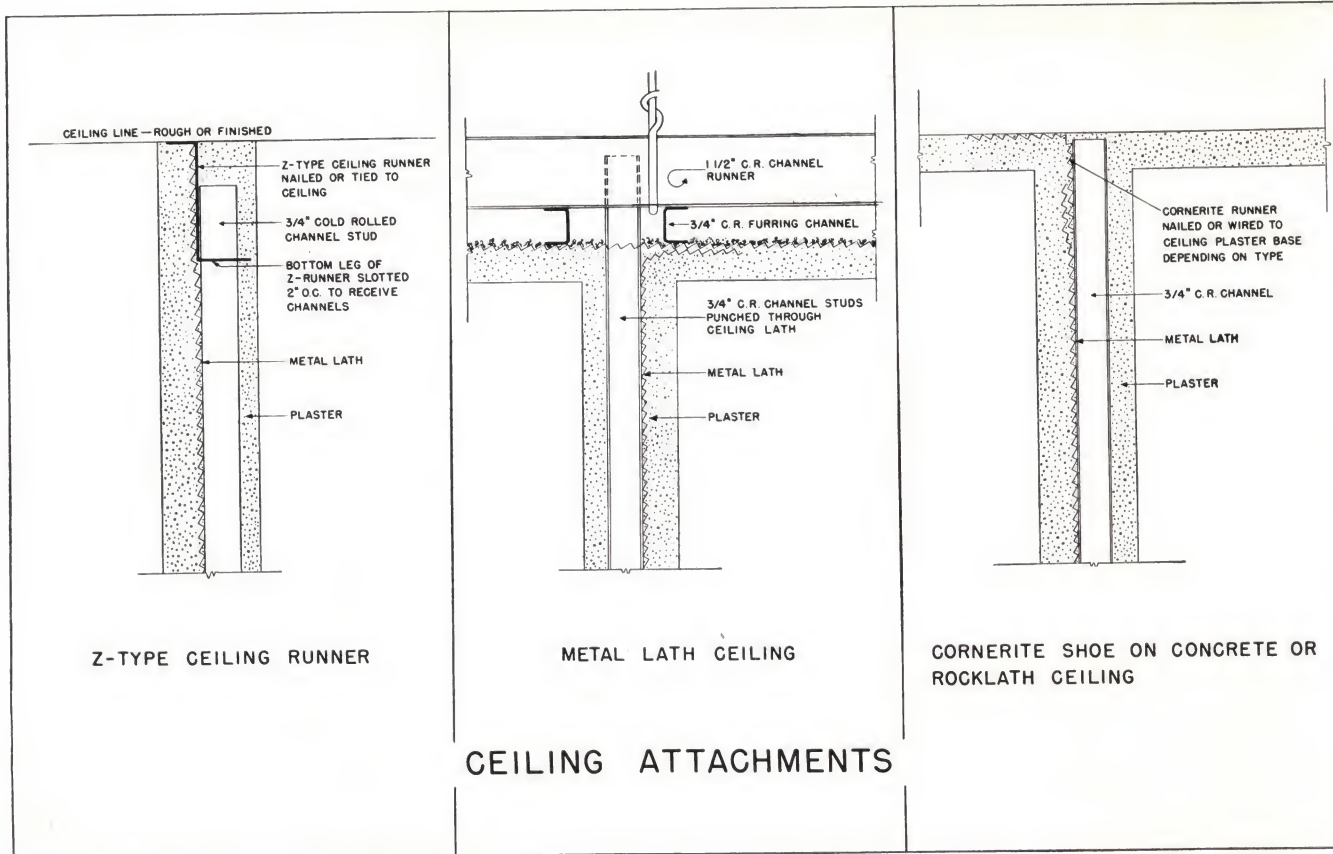
Lath sheets shall be secured to channel studs by a double strand of 18 gauge galvanized tie wire at 6" intervals.

PLASTERING (APPLICATION)

Plastering shall be of 5 coats to a total overall thickness of 2". First, scratch coat on lath side; allow to set and dry. Second, back-up coat on channel side applied to full grounds in not less than two operations. Third, brown coat on lath side. Fourth and fifth, finish coat on each side.

Temporary bracing of studs shall be furnished on the channel side of the partition and maintained until the scratch coat on the lath side has set.

2" SOLID METAL LATH AND PLASTER PARTITION



USG METAL BASE

FOR 2" SOLID LATH AND PLASTER PARTITIONS

DESCRIPTION

A metal base system for partitions or walls composed of floor clips or masonry wall clips and steel side plates 2½" high (18 or 20 gauge, primed with a rust inhibiting paint).

A friction-tension grip holds the side plates to the floor clips until the unit is grouted. The assembly of two side plates to one floor clip (double clip) provides a 2" wide base assembly for 2" solid plaster partition using either metal lath or ROCKLATH as the plaster base (see A.I.A. Folder #20-B-3 describing 2" solid ROCKLATH partition, or page 10, this folder, describing 2" solid metal lath partition). The assembly of only one side plate to a single type clip provides a base unit for either a single faced partition or for wall furring. A base unit for masonry walls that are to be plastered, such as PYROBAR,* is provided by attaching the masonry wall clip to one piece of side plate and then nailing or tying through the clip into the masonry wall.

FUNCTION AND UTILITY

USG Metal Base is used to produce in one economical unit, a flush type steel base for partitions or other walls; a means of partition alignment; and a plaster ground.

Its design permits installation on any type of rough or finished floor. The ears of the floor clips engage the top flange of the side plates, permitting the side plates to independently and automatically adjust to uneven and irregular floors.

The assembled metal base unit for 2" solid partitions must be solidly grouted with a plaster and sand grout. For 2" solid ROCKLATH and plaster partitions a V-shaped groove must be made in the grouted base unit before the grout hardens. This groove centers the ROCKLATH before plastering. For 2" solid metal lath and plaster partitions the base unit is grouted *after* the channel studs have been erected and *either before or after* the metal lath has been wired to the studs.

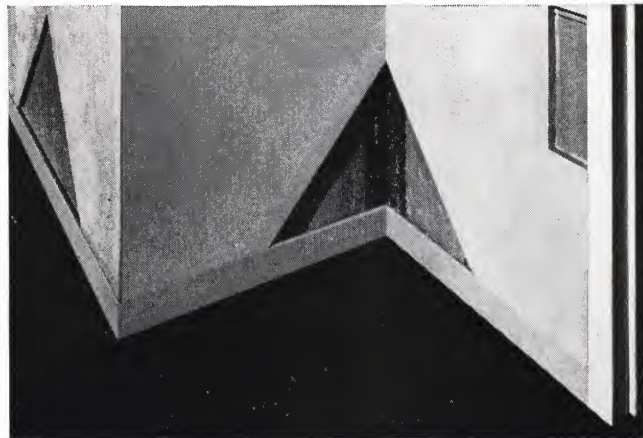
The side plates can be easily bent to form corners by notching the flanges. Side plates can be made continuous from one type of wall construction to another (e.g. From interior 2" solid partitions to exterior furred walls); ends of side plates are butted and internally spliced to make these continuous runs.

After the partition or wall has been plastered, the external faces of the side plates are exposed.

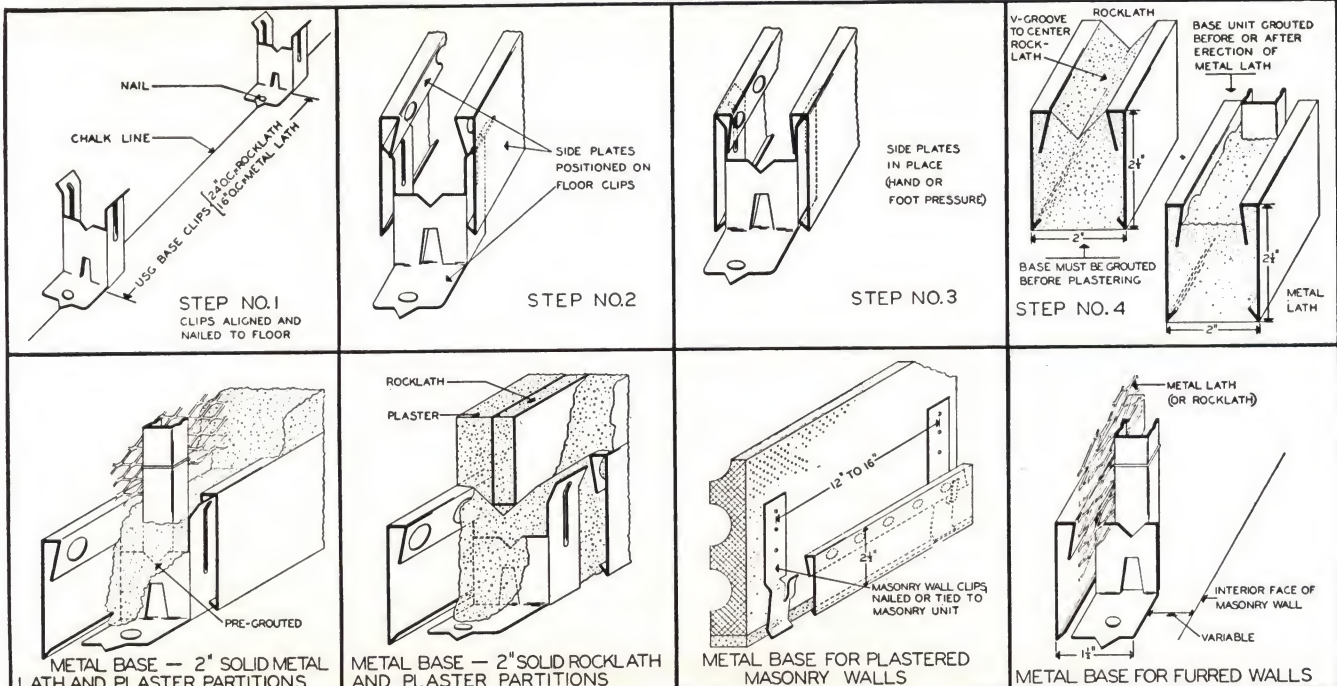
This type of base adds no combustible materials to the construction and affords protection to the base of the partition.



Channel Studs erected, USG metal base grouted; ready for metal lath and plaster.



Cut-aways show use of USG metal base in 2" Solid ROCKLATH and Plaster partition.



*Trademark Reg. U. S. Pat. Off.

METAL LATH RESILIENT PLASTERING SYSTEM

DESCRIPTION

A system composed of metal lath, steel furring members and spring clips that provides a non-rigid or floating attachment of plastered surfaces to structural members.

FUNCTION AND UTILITY

1. Provides greatly increased protection against plaster cracking due to structural movement.
2. The system assures all the advantages of metal lath construction such as adequate grounds, flexibility and absence of streaking.
3. The resilient character of the clip provides a considerable reduction in the transmission of sound through walls or ceilings.
4. Adaptable to wood supports, suspended ceilings, hollow partitions and masonry or concrete surfaces.

SPECIFICATIONS

Scope

The USG Metal Lath Resilient System shall be provided where shown on plans or indicated in specifications.

Lathing Materials—Lathing materials shall be USG Metal Lath and USG cold rolled channels.

USG resilient clips shall be:

1. No. 100 for suspended ceilings, spacing of furring channels not to exceed 16" center to center.
2. No. 200 for wood joists; spaced 12" along joists and attached

with 4d common nails. Wire a 1/4" pencil rod to the inside of tongue on the clip.

3. No. 200 for wood studs; spaced 16" along studs, then follow procedure as for wood joists.

4. For wood furring strips where face nailing is required, proceed same as for wood studs, except substitute No. 300 Resilient Clip for No. 200. Do not use No. 300 for ceilings.

5. For use on TRUSSTEEL Studs use No. 400 Resilient Clips spaced 16" along stud. Wire a 1/4" pencil rod into the notch on the outside flange of the clip.

6. For masonry walls and concrete ceilings, use No. 500 Resilient Clip. Attach clip to gypsum tile with 2" staples. Attach to brick or clay tile with 10d cut nails. Attach to concrete ceiling with 9 gauge wire placed in position before concrete is poured, wire extending at least 1 1/2" below concrete surface. Three-quarter-inch USG Cold Rolled Channels shall be wired to the inside of the tongues of the clips with the webs of the channels away from the lath.

Spacings of No. 500 Clips shall be as follows:

SPACING OF FURRING CHANNELS

12"

16"

19"

24"

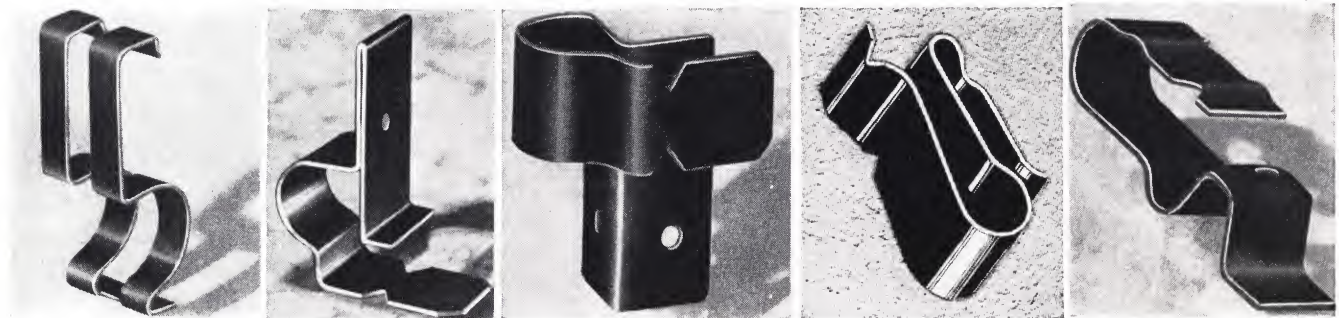
SPACING OF No. 500 CLIPS

24"

18"

15"

12"



Resilient Clip No. 100

Resilient Clip No. 200

Resilient Clip No. 300

Resilient Clip No. 400

Resilient Clip No. 500

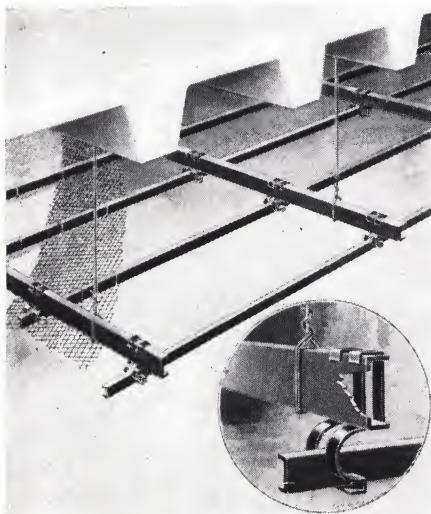


Figure 1
SUSPENDED CEILING. Showing application of No. 100 Clip for suspended ceiling construction. The clip provides resilient attachment of furring channel to runner channel by replacing use of the tie wire. Easy to erect.

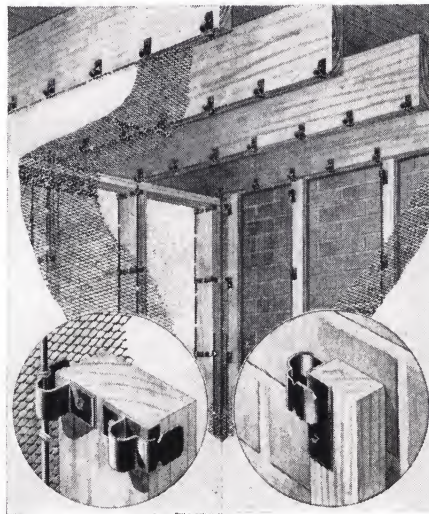
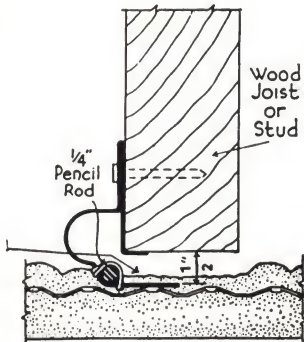


Figure 2
WOOD FRAME CONSTRUCTION. Showing application of No. 200 Clip on wood studs and joists and No. 300 Clip on wood furring on masonry walls. Clips provide resilient attachment of metal lath and protect plaster finish.

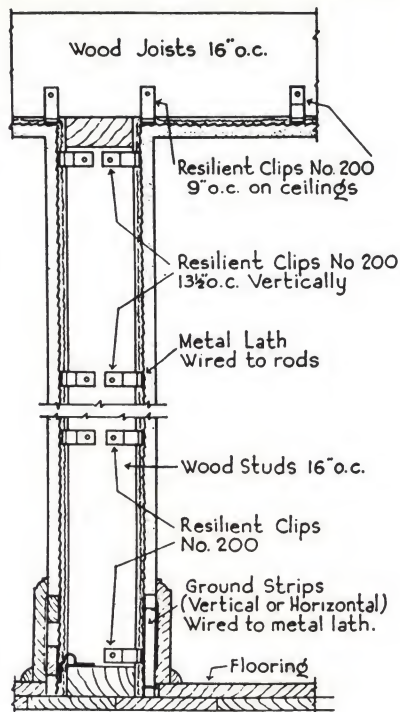


Figure 3
MASONRY SURFACES. Showing use of No. 500 Clip on ceiling under concrete joist and on masonry walls. Clip is also used on other masonry surfaces. Provides furring and resilient attachment of metal lath.

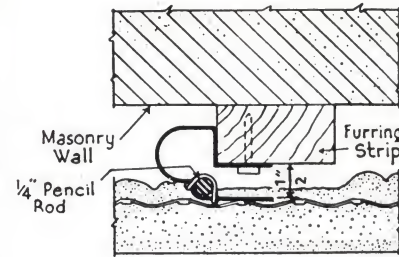
METAL LATH RESILIENT PLASTERING SYSTEM



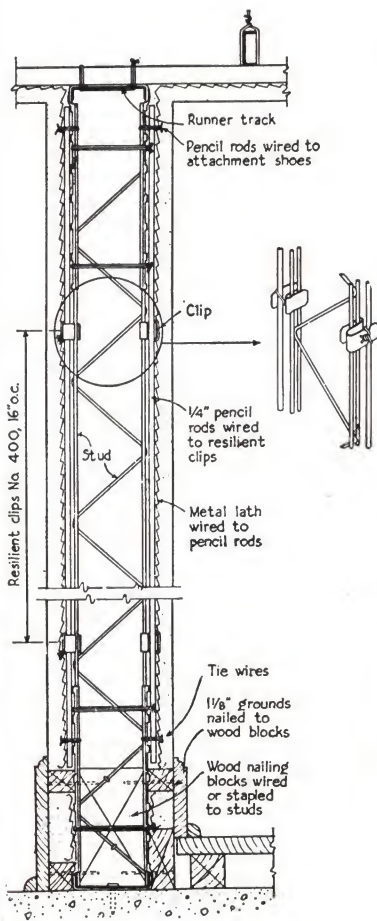
CLIP No. 200



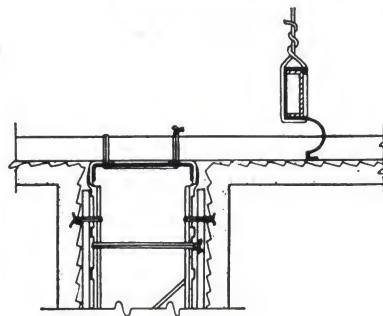
WOOD CONSTRUCTION



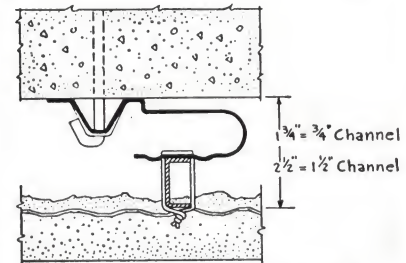
CLIP No. 300
For Wood Furring on
Masonry Construction



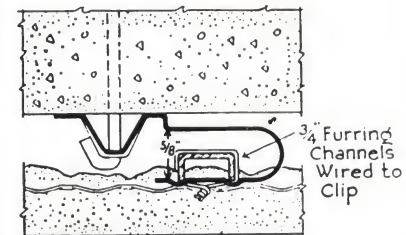
CLIP No. 400
TRUSSTEEL STUD PARTITION



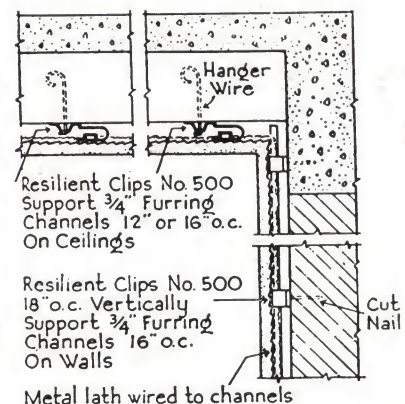
CLIP No. 100
For Suspended Ceilings



Clip No. 500 as a Wall Furring Device



CLIP No. 500



MASONRY CONSTRUCTION

USG METAL LATH

$\frac{3}{8}$ " AND $\frac{3}{4}$ " RIBLATH FOR CONCRETE SLAB REINFORCING

These heavy types of expanded metal lath are recommended for use as a combined form and reinforcing for light weight short span concrete slabs. The spacing of beams, the thickness of the slab and the safe load required will determine whether $\frac{3}{8}$ " or $\frac{3}{4}$ " Riblath shall be used. Consult data below.

LOADING TABLES FOR $\frac{3}{8}$ " RIBLATH

| Thickness of Slab Above Mesh | Wt. of Concrete (Lbs. Per Sq. Ft.) | Wt. of Lath (Lbs. Per Sq. Yd.) | SAFE SUPERIMPOSED LOADS (Lbs. Per Sq. Ft.) | | | |
|------------------------------|------------------------------------|--------------------------------|--|-----|-----|-----|
| | | | SPAN IN INCHES | | | |
| | | | 12 | 16 | 19 | 24 |
| 2" | 24 | 3.4 | 950 | 536 | 380 | 238 |
| 2" | 24 | 4.0 | 1090 | 613 | 433 | 271 |
| 2½" | 30 | 3.4 | 1200 | 675 | 479 | 300 |
| 2½" | 30 | 4.0 | 1360 | 766 | 544 | 340 |
| 3" | 36 | 3.4 | 1450 | 815 | 578 | 362 |
| 3" | 36 | 4.0 | 1650 | 930 | 625 | 412 |

LOADING TABLES FOR $\frac{3}{4}$ " RIBLATH

| Thickness of Slab Above Mesh | Wt. of Concrete (Lbs. Per Sq. Ft.) | Wt. of Lath (Lbs. Per Sq. Ft.) | Max. Span for Cent. Wet Concrete | SAFE SUPERIMPOSED LOADS (Lbs. Per Sq. Ft.) | | | | | |
|------------------------------|------------------------------------|--------------------------------|----------------------------------|--|-----|-----|-----|-----|-----|
| | | | | SPAN IN FEET | | | | | |
| | | | | 3 | 4 | 5 | 6 | 7 | 8 |
| 2" | 24 | .60 | 3' 3" | 413 | 220 | 130 | 81 | 51 | 32 |
| | | .75 | 3' 7" | 516 | 277 | 167 | 107 | 70 | 47 |
| 2½" | 30 | .60 | 2' 11" | 536 | 286 | 170 | 107 | 69 | 44 |
| | | .75 | 3' 3" | 669 | 361 | 218 | 140 | 93 | 63 |
| 3" | 36 | .60 | 2' 8" | | 353 | 211 | 133 | 87 | 57 |
| | | .75 | 2' 11" | | 445 | 270 | 174 | 117 | 80 |
| 3½" | 42 | .60 | 2' 5" | | 420 | 251 | 160 | 105 | 69 |
| | | .75 | 2' 9" | | 530 | 322 | 209 | 141 | 96 |
| 4" | 48 | .60 | 2' 3" | | 487 | 292 | 187 | 123 | 81 |
| | | .75 | 2' 6" | | 616 | 374 | 243 | 164 | 113 |

SPECIFICATIONS

Metal lath for concrete reinforcing over steel beams shall be USG ($\frac{3}{8}$ " ($\frac{3}{4}$ ") Riblath as supplied by United States Gypsum Company.

Riblath sheets shall be placed over and across the steel beams with the rib upward. Edge ribs of adjacent sheets shall occur over beams and shall lap at least one inch. Lath sheets shall be attached to flange of beam with special wire attachment clips, or other approved devices.

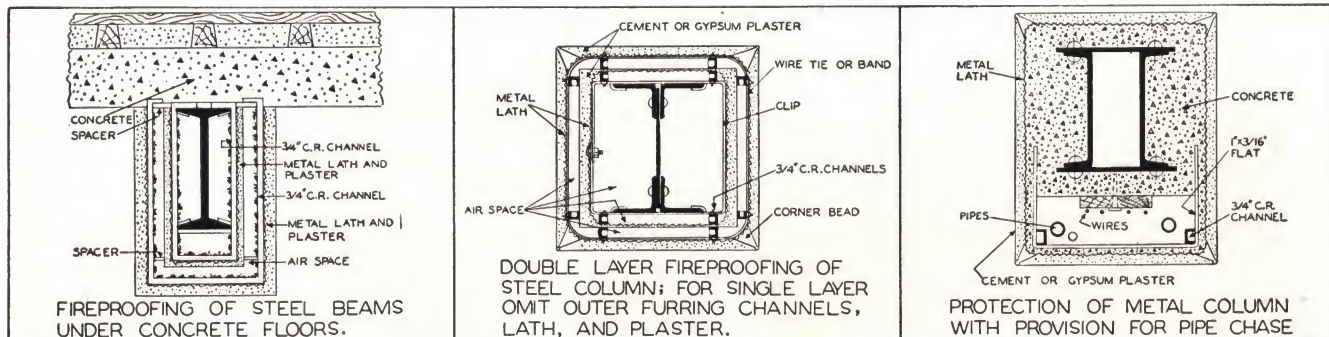
BEAM AND COLUMN FIREPROOFING SPECIFICATIONS

Metal lath shall be of 2.5 lb. copper alloy DIAMOND MESH lath, manufactured by United States Gypsum Company.

Framework to the contour and size shown on drawings shall be constructed of $\frac{3}{4}$ " cold rolled channels, or of $\frac{3}{16}$ " x 1" mild steel flats, or $\frac{1}{4}$ " round mild steel rods, or of combinations of each as approved by the architect. In no case shall the spacing of any steel bracket member exceed 12 inches unless they are cross-furred with $\frac{3}{4}$ " channels, in which case brackets shall not exceed 3' o.c.

Wire tying of brackets to structural members shall be of not less than 14 gauge galvanized wire, using saddle tie, or of 6 strands of 18 gauge galvanized tie wire. Rods may be tied to brackets with 18 gauge galvanized tie wire.

DIAMOND MESH metal lath shall be shaped to approximate contour and attached to the framework with 18 gauge galvanized tie wire at 6" intervals, and at closer intervals where necessary to hold the lath in place.



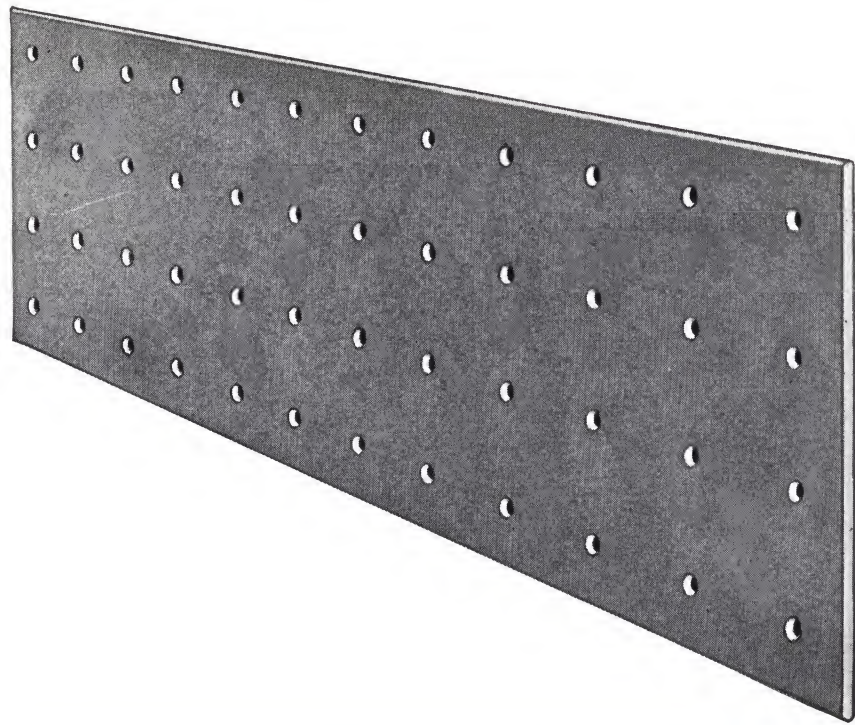
(For fire resistance ratings of above detailed constructions, refer to page 39, National Bureau of Standards report BMS-92.)

TECHNICAL INFORMATION

ROCKLATH

T. M. REG. U. S. PAT. OFF.

PLASTER BASES & ATTACHMENT SYSTEMS



United States Gypsum

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PERFORATED ROCKLATH*

DESCRIPTION

Perforated ROCKLATH plaster base is a gypsum lath made in sheet form. The core, fibered gypsum, is faced on sides and longitudinal edges with paper specially manufactured for this purpose. The perforations are $\frac{3}{4}$ " round holes 4" on centers.

Standard size is $\frac{3}{8}$ " x 16" x 48".

FUNCTION AND UTILITY

FIREPROOF—ROCKLATH plaster base, having a gypsum core, is incombustible and will not transmit temperatures much over 212°F. until completely calcined, a slow process. For economy perforated lath is especially useful where one hour fire ratings are required. Refer to Technical Data on next page.

RESISTANCE TO SOUND TRANSMISSION—BMS report No. 17, published by National Bureau of Standards, assigns a sound-transmission loss rating of 41.1 db. to a wood stud partition with gypsum lath and plaster both sides. See Technical Data on next page for higher ratings.

STRENGTH OF BOND—Tests indicate gypsum plaster bonds to Perforated ROCKLATH with a factor of safety of 144. This unusual bonding strength, partially due to the "riveting" of plaster through the lath, helps account for the high fire rating of Perforated ROCKLATH and plaster.

STRUCTURAL STRENGTH—The large sheets add appreciable resistance to lateral distortion of the frame. When plastered to standard $\frac{7}{8}$ " grounds, the construction offers high transverse strength between framing members.

PERFORMANCE—Gypsum is a mineral, not affected by time, decay, dry rot, or humidity conditions; does not attract vermin.

LOW IN COST—Its low cost and outstanding performance have made perforated ROCKLATH plaster base and plaster the standard of excellence throughout the country because:

- Material is low in cost.
- Large units (5 $\frac{1}{3}$ square feet) are quickly erected, affording low labor cost.
- Requires approximately 20 per cent less plaster than other key-type laths.

LIMITATIONS OF USE

- ROCKLATH, $\frac{3}{8}$ " thick, is designed for supports not to exceed 16" on centers. For centerings greater than 16" and not more than 24", $\frac{1}{2}$ " thickness of ROCKLATH should be used.
- For use with gypsum plaster only. Bond between lime or portland cement plaster and ROCKLATH is inadequate.
- Gypsum lath and plaster, painted with 3 coats lead and oil, has a vapor permeability of about 7 $\frac{1}{2}$ grains of water per square foot per hour per psi difference in vapor pressure. For higher resistance to vapor transmission, use Insulating ROCKLATH plaster base described on page 5.

"ROCKLATH", "SHEETROCK", "BRIDJOINT" and "SABINITE" mentioned in this publication are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "ROCKLATH" identifies the particular gypsum lath or plaster base; "SHEETROCK" identifies the particular gypsum wallboard; "BRIDJOINT" identifies metallic clips for use in attaching building boards and lath; "SABINITE" identifies the particular acoustical plaster; all manufactured only by United States Gypsum.



4. ROCKLATH plaster base should not be used where exposed to excessive moisture or humidity. Use galvanized metal lath (or galvanized metal fabric), and portland cement plaster.

5. Perforated ROCKLATH should not be used on ceilings with Resilient ROCKLATH Clips or similar suspensions. Use plain ROCKLATH with full scratch coat, raked and allowed to set. Follow with brown coat to total thickness of $\frac{1}{16}$ " over the lath before the application of any type of finish.

SPECIFICATIONS

For Nail-on Construction

SCOPE: Unless otherwise shown on plans, all exterior walls, all interior stud partitions and all ceilings are included. (For clip attachment details, see pages 7 and 9.)

MATERIALS: Gypsum lath shall be (Perforated) (Plain) ROCKLATH, $\frac{3}{8}$ " thick x 16" x 48", manufactured by the United States Gypsum Company. (For Insulating ROCKLATH, see pages 4 and 5.)

Accessories, including cornerite and corner bead, shall be manufactured by the United States Gypsum Company.

Nails shall be 1 $\frac{1}{8}$ " 13 gauge, blued $\frac{3}{8}$ " flat head, smooth diamond point. (For attachment to wood.)

APPLICATION: ROCKLATH plaster base shall be applied face out with long dimension at right angles to the framing members. On walls, the end joints shall be made to fall on different supports in alternate courses. On ceilings, end joints shall either be staggered as for side walls, or the ROCKLATH shall be erected so that the end joints are made continuous on a support, in which case end joints shall be covered with 3-inch strip-lath and the long or edge joints shall be offset or staggered. In all cases, ROCKLATH joints shall be butted together. Space nails approximately 4 inches apart, using 5 nails per lath per support. Cut accurately and fit ROCKLATH neatly around all electrical outlets, etc. All re-entrant angles shall be reinforced over the ROCKLATH with Cornerite. Cornerite shall be fastened only sufficiently to retain position during plastering. Cornerbead shall be applied to all exterior angles by nailing through to the framing.

*Trademark Reg. U. S. Pat. Off.

PLAIN ROCKLATH

DESCRIPTION

Plain ROCKLATH plaster base is a gypsum lath made in sheet form. The core, fibered gypsum, is faced on sides and edges with paper specially manufactured for this purpose.

Standard size is $\frac{3}{8}$ " x 16" x 48".

FUNCTION AND UTILITY

To provide a fireproof plaster base for steel or wood supports. Plain ROCKLATH is the equal of Perforated ROCKLATH with respect to:

1. Resistance to sound transmission.
2. Structural strength.
3. Durability.
4. Low cost.

LIMITATIONS OF USE

Same as Perforated ROCKLATH plaster base except that where a one hour fire protection is required, then Perforated ROCKLATH should be used. (See Technical Data Chart.)

TECHNICAL DATA

PARTITIONS

| Construction | Total Weight Per Sq. Ft. | Fire Rating | Authority | Sound Trans. Loss | Authority |
|---|--------------------------|-------------|---|-------------------|------------------------------|
| $\frac{3}{8}$ " Plain or Insulating ROCKLATH, nail-on, 2"x4" studs. Plastered with gypsum plaster 1:2—1:2 | 15.0 lbs. | 45 Min. | National Bureau of Standards | 41.1 | National Bureau of Standards |
| $\frac{3}{8}$ " Plain or Insulating ROCKLATH, nail-on, 2"x4" studs. Plastered with wood fiber plaster. | 13.7 lbs. | 1 Hr. | National Bureau of Standards | 41.1 (1) | |
| $\frac{3}{8}$ " Perforated ROCKLATH, nail-on, 2"x4" studs. Plastered with gypsum plaster 1:2—1:2. | 15.0 lbs. | 1 Hr. | National Bureau of Standards | 41.1 (1) | |
| $\frac{3}{8}$ " Perforated ROCKLATH—Resilient clips. Plastered with gypsum plaster 1:2—1:2. | 15.0 lbs. | 45 Min. | A Nationally Recognized Fire Testing Laboratory (2) | 47.0 | National Bureau of Standards |
| $\frac{3}{8}$ " Perforated ROCKLATH—Resilient clips. Plastered with wood fiber plaster. | 13.7 lbs. | 45 Min. (1) | | 47.0 (1) | |

CEILINGS

| | | | | | |
|---|----------|-------------------|------------------------------|----------|--|
| $\frac{3}{8}$ " Perforated ROCKLATH nailed to 2"x10" wood joists with $\frac{5}{16}$ " headed nails. $\frac{3}{4}$ " sub floor—diaphragm of asbestos paper—T&G finished floor. Ceiling plastered with gypsum plaster 1:2— $\frac{1}{2}$ " thick. | 6.0 lbs. | 30 Min. | National Bureau of Standards | No Test | |
| Same as above except nails had $\frac{3}{8}$ " head. | 6.0 lbs. | 45 Min. | National Bureau of Standards | No Test | |
| $\frac{3}{8}$ " Perforated ROCKLATH nailed to 2"x10" wood joists with $\frac{3}{8}$ " headed nails. Striplath applied to joints with $\frac{3}{4}$ " nails having $\frac{1}{2}$ " head. Plastered with gypsum plaster 1:2— $\frac{1}{2}$ " thick. | 6.0 lbs. | 1 Hr. | National Bureau of Standards | No Test | |
| Plain ROCKLATH—Resilient Clips. Plastered with wood fiber plaster. | 5.3 lbs. | 20 Min. (1) | | 50.0 (1) | |
| Plain ROCKLATH nailed to 2"x10" joists and Striplath joints. Plastered with wood fiber plaster and finished with SABINITE* "M" Acoustical plaster. | 5.0 lbs. | 1 Hr. 15 Min. (1) | | 42.0 (1) | |

(1) Estimated from available data.

(2) Name on request.

*Trademark Reg. U. S. Pat. Off.

INSULATING ROCKLATH

DESCRIPTION

Insulating ROCKLATH plaster base is plain ROCKLATH plaster base with a sheet of bright aluminum foil on the reverse side.

FUNCTION AND UTILITY

Similar to those listed for Plain ROCKLATH plus:

Vapor Barrier—Aluminum foil is the most effective vapor barrier known and used commercially. See rating table on next page.

On Insulating ROCKLATH the aluminum foil is attached to the back of the lath and is properly located in the exterior wall and ceiling construction.

Insulating Value. When accompanied by not less than $\frac{3}{4}$ " air

space next to the foil, it provides insulation equivalent in value to $\frac{1}{2}$ " fiber insulation board.

Cost—One cent to one and one-half cents per sq. ft. more than Plain or Perforated ROCKLATH plaster base.

LIMITATIONS OF USE

Same as Plain ROCKLATH, except for vapor transmission.

SPECIFICATIONS

Use specifications given for Plain or Perforated ROCKLATH plaster base, adding the following paragraph:

MATERIALS

Gypsum lath for exterior walls and top floor ceilings shall be Insulating ROCKLATH plaster base $\frac{3}{8}$ " x 16" x 48", manufactured by United States Gypsum Company.

EFFECT OF VAPOR BARRIERS ON CONDENSATION

Atmospheric air always contains moisture in the form of an invisible gas, water vapor. Like all gases, this water vapor exerts pressure, the greater the quantity of it present in the air at a given temperature, the higher the pressure. Consequently, just as water at a higher level will flow to a lower point unless a barrier is interposed, so water vapor at a higher pressure will flow to an area of lower pressure unless a suitable barrier intervenes.

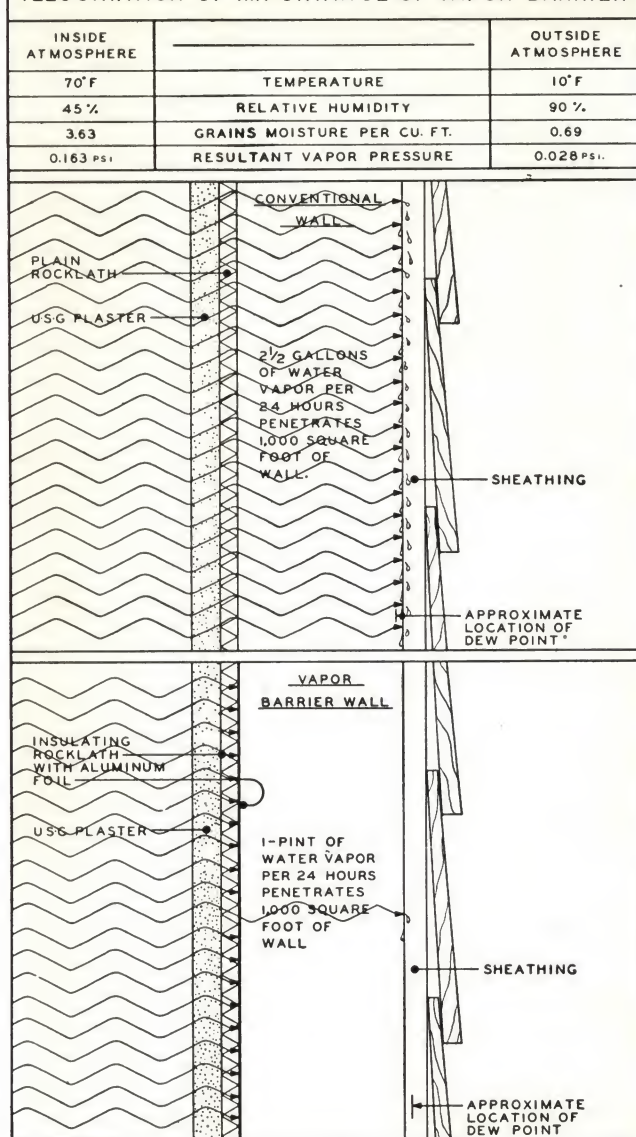
In the typical examples shown on the next page, the higher water vapor on the inside exerts a higher pressure than exists outside. It, therefore, flows toward the outside, progressively meeting colder and colder temperatures. As the temperature decreases, the air can hold less and less water vapor without becoming saturated with

it. So, at a point near the back of the sheathing in both walls, temperatures are reached where the air can no longer hold the water vapor moving into it, and the excess water vapor condenses out within the constructions. However, the rate of vapor flow toward the outside in the "Conventional Wall" is about 20 times as great as it is in the "Vapor Barrier Wall," because the vapor permeability of the plaster and lath in the former is about 20 times that of the plaster, lath and foil in the "Vapor Barrier Wall." As a result, the condensation in the "Conventional Wall" is about $2\frac{1}{2}$ gallons per one thousand square feet of wall per day, whereas only about 1 pint condenses out in the same area of "Vapor Barrier Wall."

When the atmospheric conditions indicated are of consider-

INSULATING ROCKLATH (Cont.)

ILLUSTRATION OF IMPORTANCE OF VAPOR BARRIER



able duration, the amount of condensation in the "Conventional Wall" is sufficient to damage the interior decoration, exterior paint, or any of the other wall components. In the "Vapor Barrier Wall," however, the quantity of condensate is so minor as to be readily dissipated.

Recommendations

1. An efficient vapor barrier should be installed in all exterior walls and ceilings in locations where below freezing weather

occurs for extended periods of time.

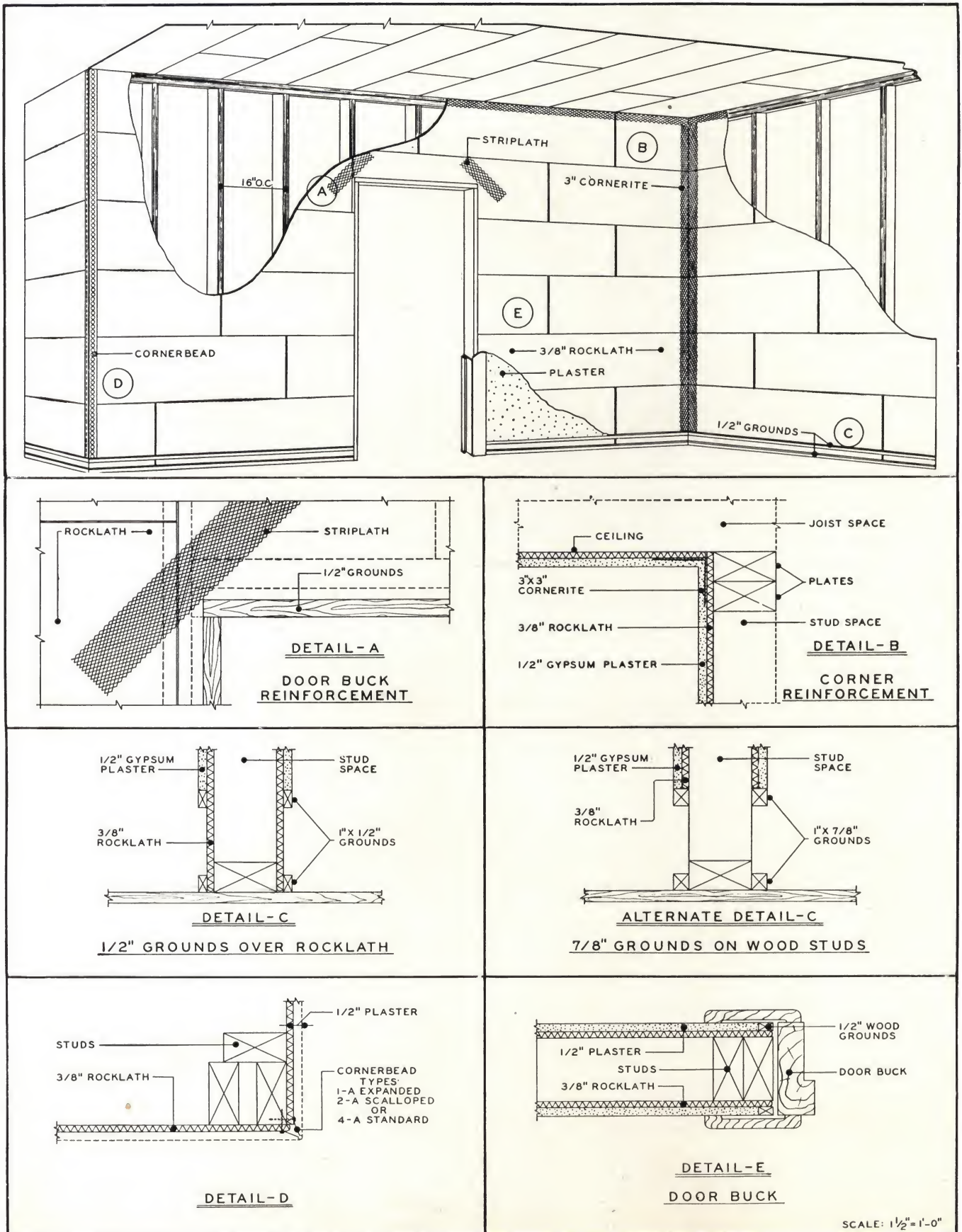
2. Barrier should be toward the warm side of the wall.
3. Vapor barrier should have a vapor permeability of not more than 2.50 grains per square foot, per hour, per pound per square inch vapor pressure difference. (Equivalent to approximately 1.25 grains per square foot, per hour, per inch of mercury vapor pressure difference.)
4. Aluminum foil is the most efficient vapor barrier known and used commercially. When applied at our mills to the back of ROCKLATH plaster base or SHEETROCK * gypsum wall-board, the resultant products are known as Insulating ROCKLATH and Insulating SHEETROCK. Permeabilities to vapor transmission of these and other materials are shown below.

| Material | Permeability In Grains Per Sq. Ft. Per Hr. Per Psi. |
|---|---|
| Insulating ROCKLATH and Insulating SHEETROCK..... | 0.173 to 0.785 |
| Duplex Papers..... | 1.05 to 5.24 |
| Insulation Back-up Paper..... | 1.75 to 6.97 |
| Fir Sheathing..... | 6.0 |
| 1/2" Plywood..... | 5.43 to 6.85 |
| Paint Film..... | 7.0 |
| Plaster with 3 coats lead and oil paint..... | 7.5 to 7.84 |
| Pine lap siding..... | 10.0 |
| Slaters Felt..... | 10.5 to 52.4 |
| Plaster on wood fiber board or plain gypsum lath..... | 22.4 to 41.9 |
| Fiber board sheathing..... | 52.3 to 69.8 |
| Still air..... | 70.9 |

For other permeability ratings see BMS-63—Bureau of Standards

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ROCKLATH PLASTER BASES - Details



ROCKLATH RESILIENT LATHING SYSTEM

DESCRIPTION

The ROCKLATH Resilient Lathing System is a method for attachment of ROCKLATH plaster base, "floating" it from the framing by means of resilient spring clips.

FUNCTION AND UTILITY

EXCELLENT RESISTANCE TO SOUND TRANSMISSION. National Bureau of Standards assigns a sound transmission loss rating of 47.0 db. to a wood stud partition with resilient clips, gypsum lath and plaster both sides. See Technical Data Page 3.

MAXIMUM CRACK RESISTANCE. Spring clips permit limited movement of framing members, their resilience reducing the strain on the plaster coat.

REDECORATION ECONOMY. Minimizes possibility of streaking of decoration due to unequal temperatures where plaster base normally contacts framing members.

FLEXIBLE. Is applied to wood, steel or masonry construction.

COST. The increase in cost is only nominal and represents principally the additional cost of clips over nail-on system of application.

LIMITATIONS OF USE

Same as for Plain ROCKLATH plaster base. Plain or Perforated ROCKLATH plaster base is recommended for side walls. Only plain ROCKLATH with 3 coats of plastering is recommended for ceilings.

SPECIFICATIONS

(Include the following paragraphs in the basic ROCKLATH plaster base Specification.)

SCOPE

Designated areas shall be lathed and plastered with the United States Gypsum Company ROCKLATH Resilient System.

CARPENTRY WORK

(For inclusion in the Carpentry Specifications.) Grounds for Resilient Lathing System shall be $1\frac{1}{4}$ ". Furnish bucks of sizes detailed at all door openings.

MATERIALS

Lath shall be (Plain) (Perforated) (Insulating) $\frac{3}{8}$ " x 16" x 48" ROCKLATH plaster base, made by the United States Gypsum Company. Clips for attachments shall be USG Resilient ROCKLATH Clips of type required, made and recommended by United States Gypsum Company. Cornerbeads shall be (1A Expanded) (4A Standard) manufactured by United States Gypsum Company.

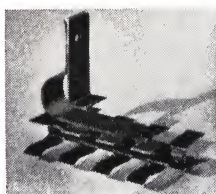
APPLICATION

ROCKLATH plaster base shall be applied face out with the long dimension at right angles to the framing members with staggered end joints. Also stagger joints between walls and ceilings so that vertical joints on wall will not meet ceiling joints. All ROCKLATH corners shall occur over framing members and be secured with clips. Also, a clip shall be placed at every intersection of ROCKLATH edges and framing members. ROCKLATH shall be attached to framing members by means of USG Resilient ROCKLATH Clips spaced 16" on center in both directions. Attachment clips shall be used per following schedule:

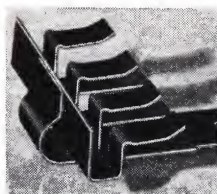
| | |
|--------------------|-----|
| For field | R-1 |
| Corners and angles | R-2 |
| Ceiling channels | R-3 |
| Wood furring | R-4 |
| Solid masonry | R-5 |

(See illustrations at bottom of page)

All cornerbeads shall be attached to ROCKLATH plaster base with staples or tie wires. Under no circumstances shall ROCKLATH or accessories be attached to framing. *(See construction details on page 9.)*



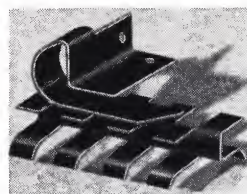
R-1 Clip



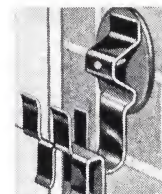
R-2 Clip



R-3 Clip



R-4 Clip



R-5 Clip

ROCKLATH RESILIENT LATHING SYSTEM

REDUCTION OF SOUND TRANSMISSION

With the advent of lightweight construction during recent years, the problem of sound transmission has become increasingly acute. Industry and the Bureau of Standards have expended large sums in research, and we now have a fairly comprehensive knowledge of sound transmission and methods of reducing this annoyance.

Types of Sound Travel

Impact Sound, as the name implies, is created by physical impact. A machinery installation is a typical example and requires individual study to provide proper isolation. Impact sounds are the least annoying and they are not considered in this discussion. *Air-borne Sound* travels in all directions through the air from its source. It is the more common annoyance and the principal subject of this discussion.

Discussion

Sound is energy which travels in waves very much like those a pebble makes when thrown into a pool of placid water. Instead of traveling in one plane, as do the pebble-caused waves, air-borne sounds travel in all directions. These sound waves are so constituted that for half the duration of each wave the sound energy *pushes* against walls and ceilings because the air is in *compression*. For the remaining half of the cycle, the energy exerts a *pulling* force because the air is *rarified*. As these waves or cycles follow each other in rapid succession, they cause a vibration of the partition or ceiling. In other words, a construction acts as a diaphragm similar to that in a telephone receiver. The side opposite the source of sound is forced to vibrate, thus actually recreating sound in the adjacent room. Thus sound does not generally permeate from particle to particle through a construction to be emitted to the opposite side, but is recreated by diaphragmatic action.

Reduction of Sound Transmission

There are two well-known methods of reducing sound transmission:

1. The use of heavy construction which will remain relatively immovable against sound energy. Sound transmission decreases with increasing weight of a homogenous construction. A 12" thick masonry partition is considered quite resistant to sound transmission, but it is uneconomical.

2. The use of a "Shock Absorbing" system between the source of sound and the structural elements of the partition. This is a generally accepted means of decreasing sound transmission, and is the principle employed in *resilient lath and plaster construction*. This simply, but effectively, separates the structural part of the wall (stud or masonry) from the lath and plaster by means of steel springs which permit the lath and plaster to vibrate independently, thus decreasing the energy transmitted to the structural part of the wall. If the vibration of the structural section of the wall is considerably reduced, then the vibration of the lath and plaster surface on the side opposite the source of sound is similarly reduced; hence, the amount of sound recreated on that side is correspondingly lessened. The steel used in the manufacture of clips is specially chosen for its ability to provide both the required resiliency and durability.

How Sound Is Measured

Sound is measured according to its intensity or loudness. The unit of measure of this loudness is the decibel, generally abbreviated as "db". A change in intensity of one decibel is approximately the smallest change in loudness that the average ear can detect.

Soft radio music has a loudness of about 35 db.

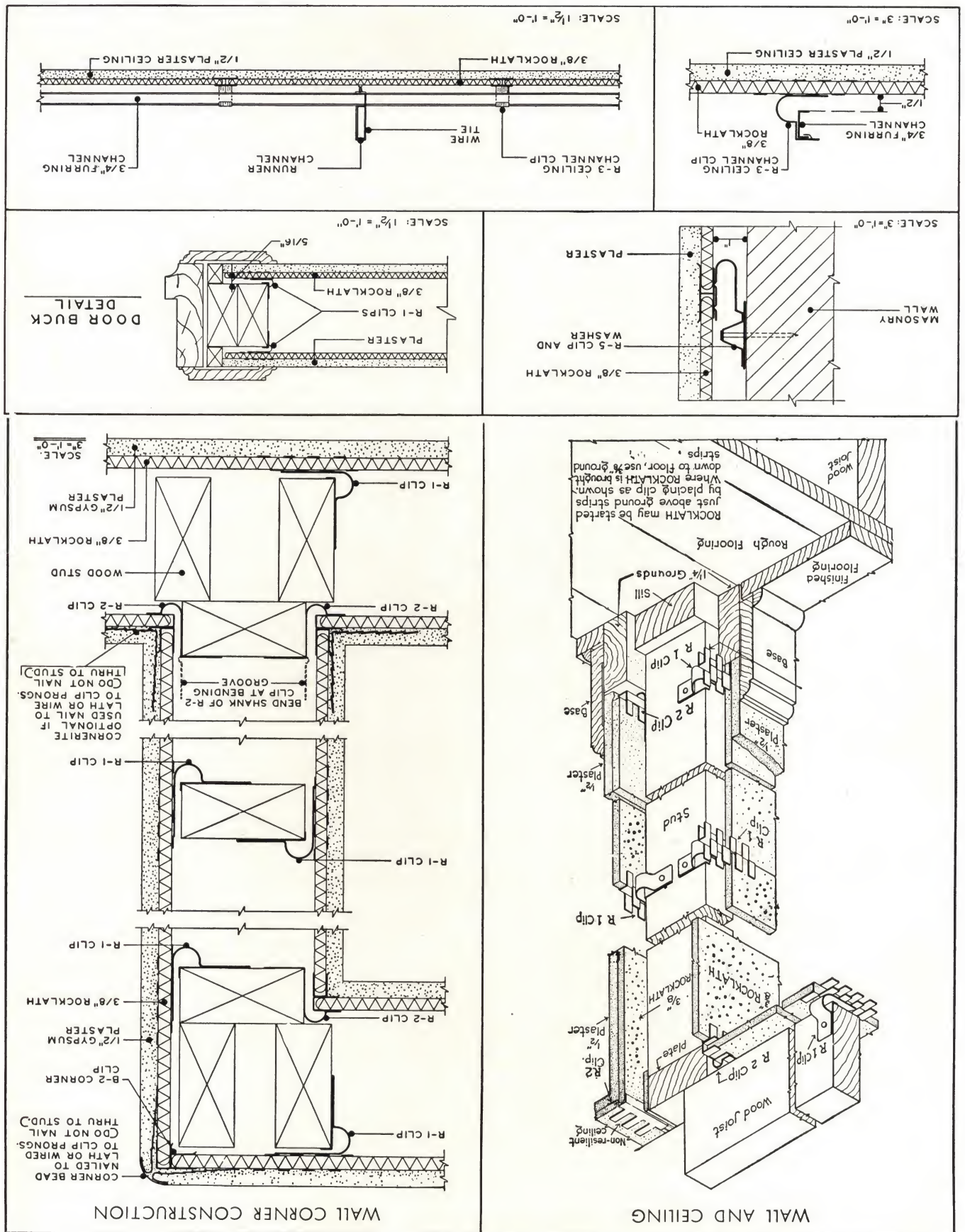
A stenographic room has a loudness of about 70 db.

The effectiveness of ceilings or partitions in lessening sound travel is expressed as a *sound transmission loss rating*. If an office is separated from a stenographic room (70 db. loudness) by a partition having a sound transmission loss rating of 40 db., then a loudness transmission of 30 db. (70 db. less 40 db.), will be detected in the office *if its noise level is zero*. If, however, the loudness in the office is 25 db., then a transmission of only 5 db. of the stenographic room loudness will be detected. If the office noise level is 30 db., then no noise transmission will be detected.

The National Bureau of Standards has evaluated many constructions for their resistance to sound transmission. While these are accurate laboratory tests, it cannot be assumed that their values will be duplicated in the field. For example, air and ventilating ducts or pipes often decrease the value of sound insulation methods. Sound travel over and under partitions may reduce the overall efficiency. Therefore, rated values of *sound transmission loss* are only relative and not always duplicated on the job.

See Technical Data Table Page 3 for sound transmission loss ratings.

ROCKLATH RESILIENT LATHING SYSTEM



BRIDJOINT LATHING SYSTEM

DESCRIPTION

The BRIDJOINT Lathing System is a clip application of ROCKLATH plaster base on walls and ceilings so designed that ends (16" dimension) of the lath fall between (not on) framing members.

FUNCTION AND UTILITY

RESISTANCE TO CRACKING. Removal of gypsum lath ends from framing members increases resistance to cracking at the most vulnerable points.

FRAMING MEMBERS need not be exactly 16" on centers, as ends of the lath may occur at random except at corners.

ADAPTABLE OVER NAILABLE STEEL FRAMING, if framing members are spaced not more than 24" on center, and provided that $\frac{1}{2}$ " thick, plain ROCKLATH is used in lieu of the $\frac{3}{8}$ ". Nails of not less than $\frac{3}{8}$ " head shall be used and must be of sufficient length to extend beyond the nail retention curve of the member, or of special design to lock in member as recommended by manufacturers of framing.

COST. Twenty-five percent less nailing of the lath is required. Cornerite and nailing are eliminated in corners, making for speed and economy. This results in only a slight increase over the cost of nail-on construction.

SPECIFICATIONS

SCOPE

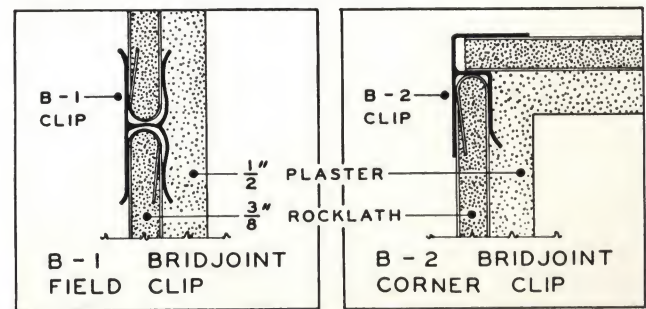
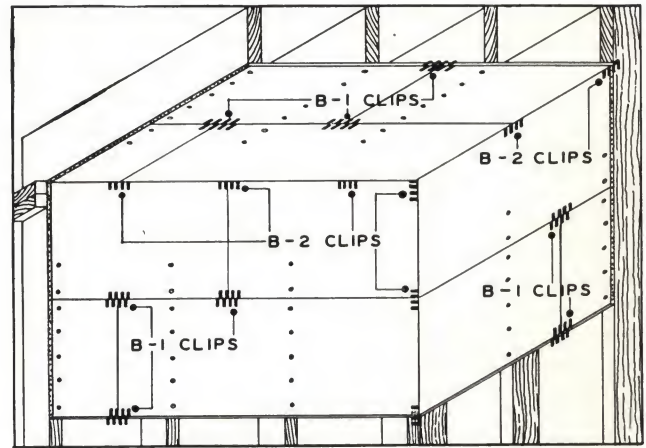
Designated areas shall be lathed with United States Gypsum Company BRIDJOINT Lathing System. Grounds shall be $\frac{7}{8}$ ".

MATERIALS

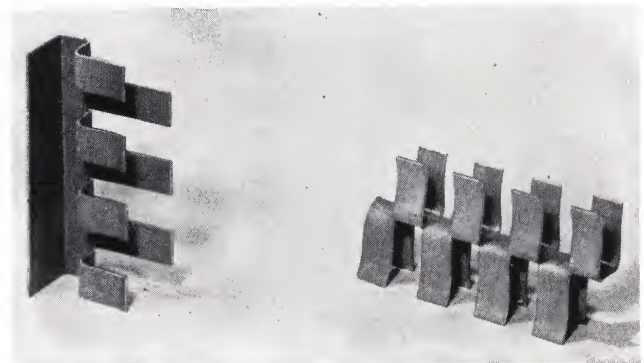
Lath shall be (Plain) (Perforated) (Insulating) $\frac{3}{8}$ " x 16" x 48" ROCKLATH, made by United States Gypsum Company. Clips for attachment shall be BRIDJOINT* Clips, manufactured by United States Gypsum Company. Cornerbeads shall be manufactured by United States Gypsum Company. Nails shall be $1\frac{1}{8}$ " x 13 gauge blued $\frac{3}{8}$ " flat head smooth diamond point.

APPLICATION

ROCKLATH shall be applied with the long dimensions at right angles to the framing members with staggered end joints. Also stagger joints between walls and ceilings so the vertical joints on walls will not meet ceiling joints. Space nails approximately 4" apart, using 5 nails per lath, per support where nails are called for. ROCK-



Details of Bridjoint Lathing System



Clip B-2

Clip B-1

Bridjoint Clips

LATH units forming the ceiling angles should be nailed only from the center of the lath to the edge, away from the ceiling angle. ROCKLATH plaster base shall be applied to framing members in such a manner that ends (16" dimension) of lath do not fall on framing members. Secure end joints to adjacent laths by the use of B-1 Field Clips at each corner of each lath. The internal corners of lath and external angles are to be secured to each other by the use of B-2 Corner Clips. Do not nail ROCKLATH in corners. For external angles, cornerbead shall be stapled or tie-wired to ROCKLATH. It shall not be secured to framing.

*Trademarks Reg. U. S. Pat. Off.

BRACE-TITE LATHING SYSTEM

DESCRIPTION

The BRACE-TITE Lathing System is a mechanical suspension of ROCKLATH plaster base to standard metal grillage ($\frac{3}{4}$ " channels not over 16" o.c.).

FUNCTION AND UTILITY

RIGIDITY SIMILAR TO NAIL-ON. The field clips, spaced 16 inches o.c., support the ROCKLATH across the full width of the board. The spring action of the field clip increases rigidity.

EASY TO APPLY. The loop of the BRACE-TITE field clip is dropped over the channel and hooked into the eye of the preceding clip.

RAPID ERECTION. Only three clips are required for each

sheet of ROCKLATH plaster base plus two USG BRIDJOINT* B-1 clips at the end joint.

NO SPECIAL MATERIALS. Any standard $\frac{3}{4}$ " channels, hot or cold rolled, may be used on conventional 16-inch or 12-inch spacing. Plain, Perforated or Insulating ROCKLATH plaster base may be used.

ADAPTABLE. The BRACE-TITE system may be used with any type of suspension having $\frac{3}{4}$ -inch channels not over 16 inches on center.

REINFORCES PLASTER. The wire clip embedded in the plaster increases crack resistance.

COST. As the BRACE-TITE system requires only $\frac{1}{2}$ -inch of plaster in two coats, its use results in economy of application. The cost under normal conditions will approximate that of other types of mechanical suspension.

SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all ceilings are to be lathed with the BRACE-TITE Lathing System.

MATERIALS

CHANNELS—Channels shall be USG $\frac{3}{4}$ " cold rolled channels, painted.

LATH—Gypsum lath shall be $\frac{3}{8}$ " x 16" x 48" ROCKLATH Plaster Base (Plain, Perforated or Insulating).

CLIPS—Attachment clips shall be BRACE-TITE Field and Starter Clips. End joint clips shall be USG B-1 BRIDJOINT* Field Clips.

CORNERITE—Cornerite shall be USG cornerite.

All of the above materials manufactured by United States Gypsum Company.

APPLICATION

$\frac{3}{4}$ " channels shall be applied to supporting $1\frac{1}{2}$ " channels or framing members, spaced 2" from parallel walls or beams and not over 16" on centers and securely wire-tied or clipped. The channel ends must extend beyond the plane of the abutting side wall. Place a BRACE-TITE starter clip over the end of the $\frac{3}{4}$ " channel at the point where it meets the starting wall. ROCKLATH Plaster Base shall be applied with the long dimension at right angles to the $\frac{3}{4}$ " channel. ROCKLATH

shall rest on top of the starter clip loops, and shall be fastened to each channel with a BRACE-TITE field clip. ROCKLATH end joints shall fall midway between channels and shall be secured with USG B-1 BRIDJOINT field clips on both sides. Succeeding courses of ROCKLATH Plaster Base shall be attached with BRACE-TITE field clips hooked over the channel and fastened into the eyes of the preceding clips. End joints of ROCKLATH shall be staggered, and shall not coincide with the end joints of previous courses. All end joints shall be secured with B-1 BRIDJOINT Clips on both sides.

The last course of ROCKLATH shall be cut to the width required to fill the remaining space. The BRACE-TITE field clip used for this final course shall be inserted over preceding clip, pulled tight into eye and excess length cut off.

Where $\frac{3}{4}$ " channel runs are interrupted by light troffers, grills, etc., BRACE-TITE starter clips shall be used to start a new course of ROCKLATH. For these locations, the extended leg of the starter clip shall be cut off so as not to protrude below the brown coat of plaster.

Angles between the ceiling and all vertical planes shall be reinforced over the ROCKLATH Plaster Base with USG Cornerite. The Cornerite shall be secured sufficiently to retain its position during plastering.

NOTE—Plaster shall be RED TOP* Gypsum Plaster manufactured by United States Gypsum Company, and shall be applied in accordance with the manufacturer's specifications for application over ROCKLATH Plaster Base.

*Trademarks Reg. U. S. Pat. Off.

BRACE-TITE LATHING SYSTEM



1. The BRACE-TITE Lathing System for mechanically suspending ROCKLATH Plaster Base to standard metal grillage ($\frac{3}{4}$ " channels not over 16" o.c.) is begun by placing a starter clip over the $\frac{3}{4}$ " channel at the juncture of the $\frac{3}{4}$ " channel and the sidewall as shown.



2. Placement of the ROCKLATH Plaster Base is begun at right angles to the channels, resting the lath on top of the starter clip loop. Engage the BRACE-TITE field clip over the channel and hook it into starter clip loop.



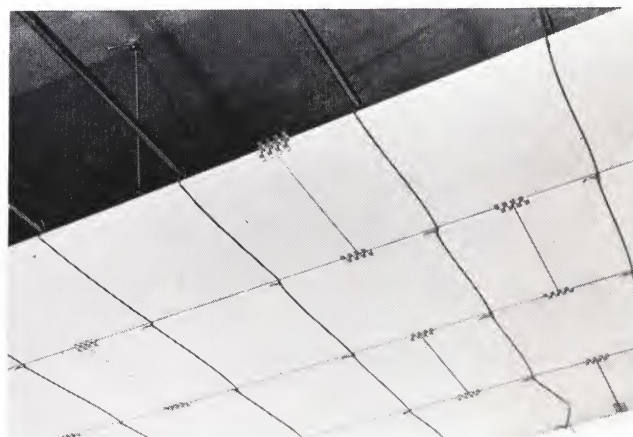
3. The loop end of the field clip is easy to hook over the channel. On the first course of lath a crimp is put in the field clip wire to accommodate the slack caused by the starter clip loop projecting out from the wall. A BRIDJOINT Clip (B-I) is used at each end joint as shown.



4. End joints of lath are staggered and must fall between channels. BRIDJOINT (B-I) clips are used on both sides of lath end joints. Upon completing a course of ROCKLATH, slip a BRIDJOINT (B-I) clip over each end joint so each end joint is firmly supported.



5. After the first course of ROCKLATH Plaster Base is completed, no further crimping of the wire is necessary. Succeeding courses are rapidly applied by looping each field clip over the channel and inserting hook into the eye of the preceding field clip.



6. The last course is completed by cutting ROCKLATH Plaster Base to proper width to fit remaining space. Insert the BRACE-TITE clip over the preceding clip, pull tight into the eye and cut off excess length.

AIA FILE NUMBER 3-L

TECHNICAL INFORMATION

SHEETROCK

THE
FIREPROOF
WALLBOARD

REG. U. S. PAT. OFF.

G Y P S U M W A L L B O A R D



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AIA FILE NUMBER 23-L

SHEETROCK*

ONE-HALF INCH RECESSED EDGE WALLBOARD

DESCRIPTION

$\frac{1}{2}$ " SHEETROCK is composed essentially of a gypsum core encased in tough paper: a heavy manila finished sheet on the face side and a strong liner paper on the back side. The long edges are recessed (thinner edges) to form a shallow channel for embedding and concealing the joint reinforcement—PERF-A-TAPE*—when 2 panels are butted. For sizes see Technical Data for SHEETROCK. (Page 4).

PERF-A-TAPE JOINT SYSTEM—consists of a strong paper tape and cement. Both products engineered for SHEETROCK joint reinforcement and concealment. The tape is made of a special, perforated, strong paper with its edges chamfered. The cement is designed for low shrinkage, maximum bond and workability.

FUNCTION AND UTILITY

$\frac{1}{2}$ " Recessed Edge SHEETROCK wallboard provides the following features:

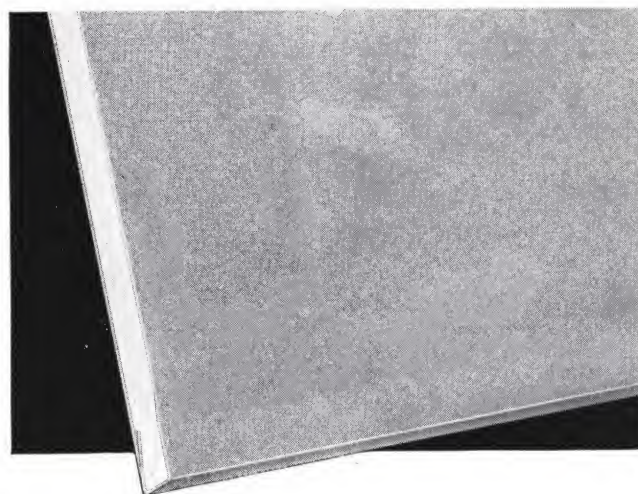
FIREPROOF. SHEETROCK will not burn or support combustion. It will not transmit temperatures greatly in excess of 212° F. until completely calcined—a slow process.

STRONG FLUSH JOINTS. PERF-A-TAPE provides a system for reinforcing SHEETROCK joints. The strength of the finished PERF-A-TAPE joint is as great as that of the board itself. The joinings between the SHEETROCK panels are concealed with a specially processed fiber tape bonded to the board with a cement of unusual strength and adhesiveness.

DECORATION. The face paper on SHEETROCK is a strong sheet with a highly calendered manila surface which is suitable for any type of decorative treatment, such as paint, texture, wallpaper, and permits repeated re-decoration during the life of the building.

CRACK-RESISTANT. "Welded" together by the PERF-A-TAPE Joint System, SHEETROCK panels form walls and ceilings that are extremely resistant to cracks caused by frame movement, vibration or settlement.

NON-WARPING. Expansion or contraction of SHEETROCK under normal atmospheric changes is negligible, consequently it will not warp or buckle.



DRY WALLS. Eliminates needless water in construction. Saves on cost of temporary heat in cold weather construction.

SPEED. Precast panels of SHEETROCK are easily cut and quickly applied.

HORIZONTAL WALL APPLICATION. (The horizontal application of SHEETROCK is applying the long length of the SHEETROCK panel at right angles to the framing members.) The strength of SHEETROCK and the joint system is such that panels may be erected horizontally on walls without the need of headers behind the horizontal joints. This method generally reduces the total lineal footage of joints, produces more inconspicuous joints, gives greater bracing strength and is the recommended application method.

LIMITATIONS OF USE

1. **Maximum Spacing of Framing Members.** $\frac{1}{2}$ " Recessed Edge SHEETROCK is designed for use on framing centers up to 24".
2. **Shower Stalls.** SHEETROCK should not be used in damp locations, as in shower stalls.
3. **Base for Ceramic Tile.** Not recommended as a base for attachment of ceramic tile with adhesive.

$\frac{3}{8}$ " SHEETROCK WALLBOARD

$\frac{3}{8}$ " SHEETROCK wallboard is identical to $\frac{1}{2}$ " SHEETROCK in all physical respects except thickness. It is the standard gypsum wallboard for repair and remodel. It is likewise used in some new homes.

All the features listed under "Function and Utility of $\frac{1}{2}$ " SHEETROCK" are essentially the same for this product.

$\frac{3}{8}$ " Sheetrock is manufactured with three edges as follows:

"SHEETROCK" and "PERF-A-TAPE" are registered trade-marks owned by United States Gypsum, used by it to distinguish its products. "SHEETROCK" identifies the particular gypsum wallboard and PERF-A-TAPE identifies the particular joint sealing tape, both manufactured only by United States Gypsum.

Recessed Edge. For use with PERF-A-TAPE where joint reinforcement and concealment is necessary.

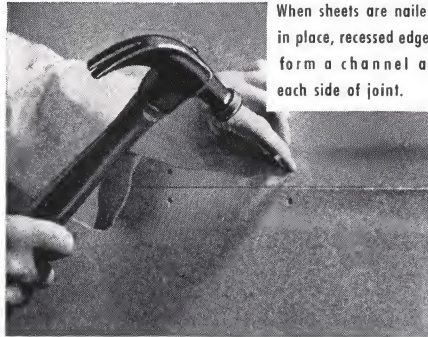
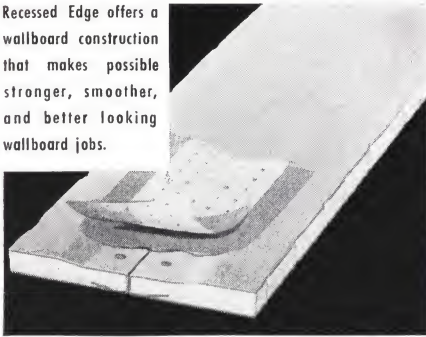
Beveled Edge SHEETROCK has a $\frac{1}{8}$ " to $\frac{3}{16}$ " bevel on the long edges. It may be used where the joint is to be featured.

Square Edge SHEETROCK is manufactured for use with batten strips or other decorative joint treatment. Its primary use is for temporary or industrial construction.

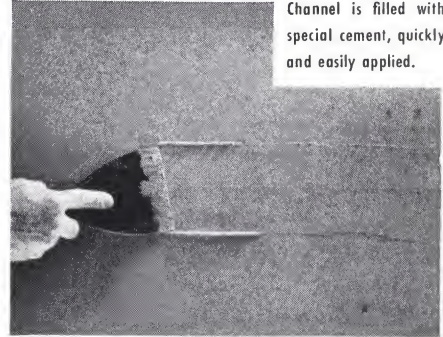
APPLICATION OF SHEETROCK

PERF-A-TAPE JOINT SYSTEM FOR SHEETROCK WALLBOARD

Recessed Edge offers a wallboard construction that makes possible stronger, smoother, and better looking wallboard jobs.



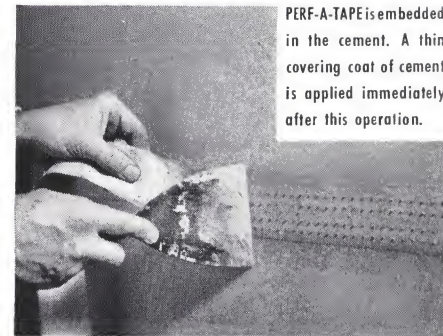
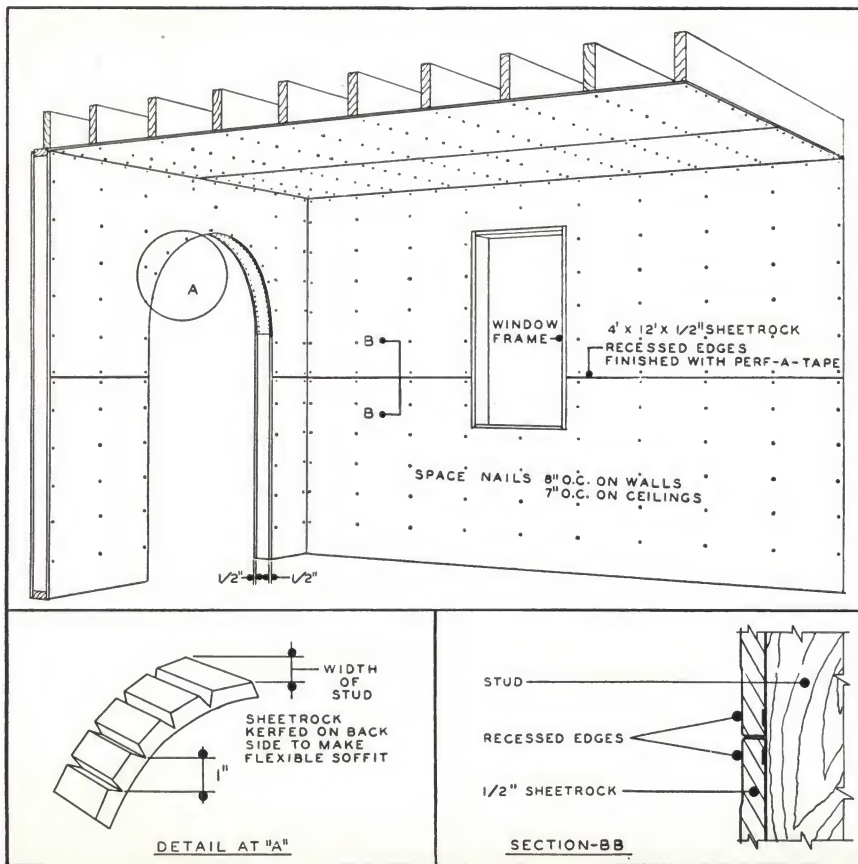
When sheets are nailed in place, recessed edges form a channel at each side of joint.



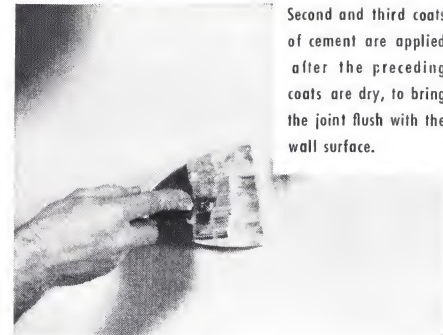
Channel is filled with special cement, quickly and easily applied.

ERECTION

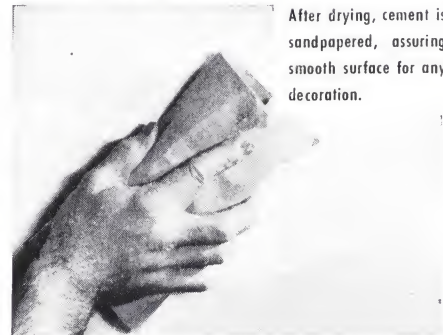
1/2" RECESSED EDGE SHEETROCK WALLBOARD



PERF-A-TAPE is embedded in the cement. A thin covering coat of cement is applied immediately after this operation.



Second and third coats of cement are applied after the preceding coats are dry, to bring the joint flush with the wall surface.



After drying, cement is sandpapered, assuring smooth surface for any decoration.

ADVANTAGES OF HORIZONTAL APPLICATION OVER NORMAL VERTICAL APPLICATION

We recommend horizontal application on walls and ceilings for the following reasons:

1. Reduces necessary joint treatment footage up to 25 per cent.
2. Strongest dimension of board runs across framing members.

3. Bridges irregularities in alignment and spacing of framing members.
4. Eliminates need for headers.
5. Better bracing continuity—ties more framing members together.
6. Joints are at convenient height on walls for the finishing operation.

TECHNICAL DATA FOR SHEETROCK

Fire Endurance Ratings of Gypsum Wallboard Partitions*

| Material | Fill between studs | Fire Endurance Period | |
|-----------------------|--------------------|-----------------------|-------------|
| | | Bearing | Non-bearing |
| 1/2" Gypsum Wallboard | None | 40 Min. | 40 Min. |
| 3/8" Gypsum Wallboard | None | 25 Min. | 25 Min. |
| 1/4" Gypsum Wallboard | No Tests | .. | .. |

NOTE: Ratings are for partitions constructed of 2" x 4" studs (16" o.c.), with Gypsum Wallboard nailed on both sides of studs.

*As published in National Bureau of Standards Publication BMS 92

BENDING RADII

| THICKNESS | LENGTHWISE | WIDTH |
|-----------|------------|-------|
| 1/2" | 20'* | .. |
| 3/8" | 7 1/2' | 25' |
| 1/4" | 5' | 15' |

*Bending two 1/4" pieces successively permits radii shown for 1/4" SHEETROCK.

Notes:

1. To apply board, place a stop at one end of the curve and then gently and gradually push on the other end of the board, forcing the center against the framing until the curve is complete.

2. By moistening the face and back paper thoroughly and allowing the water to soak well into the core, the board may be bent to still shorter radii. When the board dries thoroughly, it will regain its original hardness.

NORMAL STOCK SIZES AND SPECIFICATIONS

| Thick-ness | Edge | Width | Length | Approx. Weight Lbs. per M Sq. Ft. | Recommended Support Spacing | Joint Treat-ment | Size Nail Used | Nails Lbs. M Sq. Ft. | Maximum Nail Spacing | Decoration |
|------------|----------|-------|----------------|-----------------------------------|-----------------------------|--|---|----------------------|-------------------------------|--------------------|
| 1/2" | Recessed | 4' | 7, 8, 10 & 12' | 2100 | 16" or 24" o.c. | PERF-A-TAPE | 5d Cement Coated | 6 | 8" on Walls 7" on Ceilings | Paint or Wallpaper |
| 3/8" | Recessed | 4' | 7, 8, 10 & 12' | 1550 | 16" o.c. | PERF-A-TAPE | 4d Cement Coated | 4 1/2 | Same as above | Paint or Wallpaper |
| 3/8" | Beveled | 4' | 8, 10 & 12' | 1550 | 16" o.c. | No treat-ment re-quired | 4d Cement Coated | 4 1/2 | Same as above | Paint |
| 1/4" | Square | 4' | 7, 8, 9 & 10' | 1100 | 16" o.c. | SHEETROCK Finisher, PERF-A-TAPE, or Panel Strips | 4d Cement Coated, 6d over exist-ing plaster | 4d-4 1/2 6d-6 | Same as above | Paint or Wallpaper |

NOTE: Insulating SHEETROCK—Any of the above are available with insulating foil back in sizes given, at slight additional cost.

INSULATING SHEETROCK WALLBOARD

DESCRIPTION

Insulating SHEETROCK wallboard is regular SHEETROCK which has a sheet of bright aluminum foil securely attached to its back surface.

FUNCTION AND UTILITY

INSULATION. The bright metal foil has the property of reducing heat flow out of the home in the winter and into the home in the summer. The thermal insulating value of Insulating SHEETROCK properly applied in a wall is equivalent to that of 1/2" fiber insulating board.

VAPOR BARRIER. Insulating SHEETROCK provides an efficient vapor barrier which retards the passage of vapor through the interior lining of exterior walls, minimizing the possibility of condensation within the wall. For explanation of

THERMAL RESISTANCE (R) OF INSULATING SHEETROCK FACING AN AIR SPACE OF 3/4" OR MORE

All figures based on 1947 Guide of the ASHVE

| DIRECTION OF HEAT FLOW | Thickness of Insulating Sheetrock | | |
|---|-----------------------------------|----------|----------|
| | 1/2 inch | 3/8 inch | 1/4 inch |
| DOWNWARD Use these coefficients for ceilings and sloping surfaces under summer conditions | 6.87 | 6.78 | 6.69 |
| UPWARD Use these coefficients for ceilings and sloping surfaces under winter conditions | 2.53 | 2.44 | 2.35 |
| HORIZONTAL Use these coefficients for walls under both summer and winter conditions | 2.53 | 2.44 | 2.35 |

the effect of vapor barriers on condensation, see page 5. All items describing the function and utility of 1/2" Recessed Edge SHEETROCK also apply to this product.

SPECIFICATIONS FOR 1/2" RECESSED EDGE SHEETROCK

SCOPE

Unless otherwise shown on plans, all interior walls and ceilings shall be finished with gypsum wallboard.

MATERIALS

Gypsum Wallboard shall be 1/2" Recessed Edge SHEETROCK, manufactured by the United States Gypsum Company.

Nails shall be 5d, 13 1/2 gauge, cement-coated, flathead.

ERECTION

Framing shall be in accordance with plans and specifications *and/or shall pass minimum F.H.A. requirements.* Headers shall be provided for solid support for fixture attachment wherever necessary.

SHEETROCK panels in lengths as long as possible

shall be applied to ceilings first and then walls. All panels shall be applied with the long edges at right angles to the framing members. All ends shall be supported on framing members and joints shall be staggered. Joints on opposite sides of partitions shall not fall on the same stud.

Recessed edges shall be butted loosely together. Cut edges and mill ends shall be sanded down to provide a smooth joining.

SHEETROCK wallboard shall be securely nailed to supports, using 5d, 13 1/2 gauge, cement-coated, flathead nails, 1 5/8" long. Nails shall be spaced not less than 3/8" from edges and ends of board and shall be spaced 5" to 7" apart on ceilings and 6" to 8" apart on walls. Nails shall be driven "home," with heads slightly below the surface. Do not use a nail set.

SPECIFICATIONS FOR PERF-A-TAPE JOINT SYSTEM

MATERIAL

Joint treatment shall be PERF-A-TAPE joint reinforcing tape and cement, manufactured by United States Gypsum Company.

APPLICATION

Cement included in PERF-A-TAPE Joint System shall be mixed according to the manufacturer's directions.

All internal and external corners and angles shall be reinforced with PERF-A-TAPE Joint System and finished in the following manner:

The recess between two SHEETROCK panels shall be filled with a sufficient thickness of cement to completely hide the board at all points. The tape shall be centered on the joint and, with a SHEETROCK knife or suitable tool, pressed tightly to the two panels. The

excess cement, squeezed from between the tape and panels, shall be laid smoothly on top of the tape.

When the first coat is thoroughly dry, a second application of cement shall be spread evenly over the entire joint to beyond the shoulder of the recess.

When the second coat is thoroughly dry, the third and finish coat shall be applied so as to even up all surfaces of the joint.

All nail depressions shall receive at least two coats of cement, leaving them filled even and flush with the surface of the board.

Between applications of cement, rough spots or areas shall be sanded smooth wherever necessary. When thoroughly dry, the finish coat shall be sanded wherever necessary to leave all joints and nail spots flush and smooth and ready for decoration.

WOODGRAINED SHEETROCK

DESCRIPTION

Woodgrained SHEETROCK is a pre-finished gypsum wallboard combining the appearance of wood with the fireproof and other advantages of gypsum. The appearance of graining, knots and coloring characteristics of bleached mahogany, knotty pine and walnut are faithfully reproduced on the face of SHEETROCK by photographic and printing processes. A factory-applied lacquer helps protect and preserve the finish. It is made in $\frac{3}{8}$ " thickness and 4' widths—8' and 10' lengths. Nails are available in matching colors.

FUNCTION AND UTILITY

Woodgrained SHEETROCK wallboard is recommended for use in libraries, dens, hallways, finished attic and basement rooms, shops, offices, restaurants, clubs, display rooms, etc., where a wood paneled effect is desired. It provides the following features:

ATTRACTIVE WOOD PANEL EFFECT—SHEETROCK Woodgrained finishes in bleached mahogany, knotty pine and walnut reproduce in minute detail the appearances of color, graining, knots, burling and individuality of real wood panels.

FIREPROOF—Woodgrained SHEETROCK has the appearance of wood but will not burn because of its fireproof gypsum core. It adds fire protection to the building.

DOES NOT WARP OR BUCKLE—Woodgrained SHEETROCK has all the durability and non-warping qualities of regular SHEETROCK. This advantage is important in woodgrained finishes. It means that panels will not pull out from under mouldings and that they will maintain the straight, even surface which they have when first erected.

EASY TO CUT—SHEETROCK in woodgrained finishes is easily cut with a saw, or it may be scored and snapped.

LOW IN COST:

- (a) Unit cost of material is low.
- (b) Large unit sheets are easily and quickly erected.
- (c) Colored nails eliminate nailhead treatment.
- (d) Surface and decoration in one operation—saves decorating cost—eliminates joint treatment—saves time.

NO PANEL STRIPS OR JOINT TREATMENT REQUIRED—The fine line joint obtained by butting *square edge* knotty pine Woodgrained SHEETROCK panels together looks like a continuation of the random width plank field pattern. Bleached mahogany and walnut Woodgrained SHEETROCK have *beveled edges* which



make butted "V" joints a part of the decoration instead of something to be hidden. Picture mouldings, cove mouldings, chair rails, plate rails, and base assemblies may be of a wide variety commonly used. Mouldings may be stained to harmonize or contrast with Woodgrained SHEETROCK.

Maintenance—Woodgrained SHEETROCK is protected by its factory applied lacquer finish. It is easy to clean.

If additional protection is desired or needed, a deluxe finish may be secured by first applying a coat of white shellac, then a coat of wax for a dull finish or a coat of clear varnish for glossy finish.

Caution: Do not apply varnish without first using shellac.

LIMITATIONS OF USE

1. *Maximum framing centering.* Woodgrained SHEETROCK is not recommended for use on framing centers over 16".
2. *Excessive wear and cleaning.* Where excessive wear is expected, panels should be treated with a coat of white shellac, then waxed or varnished. Where tables or chairs frequently touch a wall, a wood chair rail should be provided.

TECHNICAL DATA FOR WOODGRAINED SHEETROCK

Same as for $\frac{3}{8}$ " SHEETROCK wallboard..

TYPICAL INSTALLATIONS—WOODGRAINED SHEETROCK



SPECIFICATIONS FOR WOODGRAINED SHEETROCK

SCOPE

Where indicated on plans, interior walls shall be finished with pre-decorated gypsum wallboard.

MATERIALS

Pre-decorated gypsum wallboard—shall be $\frac{3}{8}$ " Woodgrained SHEETROCK, manufactured by United States Gypsum Company. Type of grain shall be as shown in plans.

Nails—shall be of matching color.

As an alternate, Woodgrained SHEETROCK can be securely nailed with 5d finish nails driven at 45° angle, countersunk and puttied with Spackling Putty or plastic wood, colored to match

finish on SHEETROCK.

ERECTION

Supports such as studs, joists, or furring strips shall be spaced 16" on center and shall be level and plumb. All joints or edges shall be supported by framework or headers. Butt edges together, placing joints to get balanced panel effect, or as shown in plans. Space nails 6" to 8" o.c. Use padded or plastic head hammer to drive colored nails.

Wax or varnish finish. The Woodgrained SHEETROCK shall be given a coat of white shellac, then a coat of (wax) (varnish). Specify brand.

SHEETROCK TILEBOARD

DESCRIPTION

SHEETROCK Tileboard is a gypsum wallboard having a surface indented with tile-like impressions $4\frac{1}{4}" \times 4\frac{1}{4}"$ square. When decorated, it simulates tile. It is made in standard $\frac{3}{8}"$ thickness and 4' widths—8' and 10' lengths.

FUNCTION AND UTILITY

SHEETROCK Tileboard is used in bathrooms, kitchens, lavatories, dairy buildings, restaurants and any place where a tile design is wanted. SHEETROCK Tileboard provides the following features:

ECONOMICAL SHEETROCK Tileboard, low in cost, with its close simulation of ceramic tiling and inherent speed of erection, permits faster completion of any room where a tile effect is desired.

EASILY DECORATED. It can be decorated with gloss oil paint or enamel. When a solid color is used for "tiles" and a lighter color for joints, the appearance of ceramic tile is more nearly produced.

SPECIFICATIONS FOR SHEETROCK TILEBOARD

SCOPE

Where indicated on plans, interior walls (describe area) shall be finished with gypsum tileboard. (*Not recommended for shower walls.*)

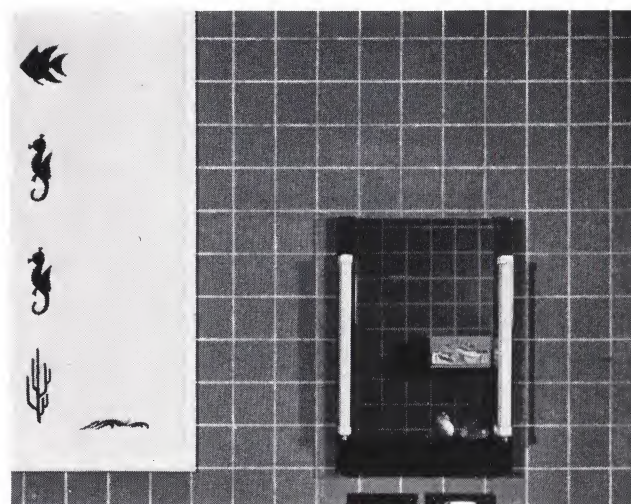
MATERIALS

Gypsum tileboard shall be $\frac{3}{8}"$ SHEETROCK Tileboard, manufactured by United States Gypsum Company.

Nails shall be 4d cement coated flathead.

ERECTION

Studs shall be spaced 16" on centers and shall be level and



plumb. Headers shall be provided wherever fixtures are to be installed. Tileboard shall be of sufficient length to span wall lengths (up to 10 feet). When end joints cannot be avoided, place them over and under openings. Cut back as near the center of the tile squares as possible and make an even match. Leave a space of at least $\frac{1}{4}"$ between tileboard and tub rim. Set bottom edge of sheet in a good grade of waterproof caulking compound and fill $\frac{1}{4}"$ space completely. Nail tileboard in "field" of tile with 4d cement coated nails. Drive nails home and fill hammer depressions with SHEETROCK Finisher. Joints and corner angles shall be treated with PERF-A-TAPE Joint System with cement grooved to match tile impressions.

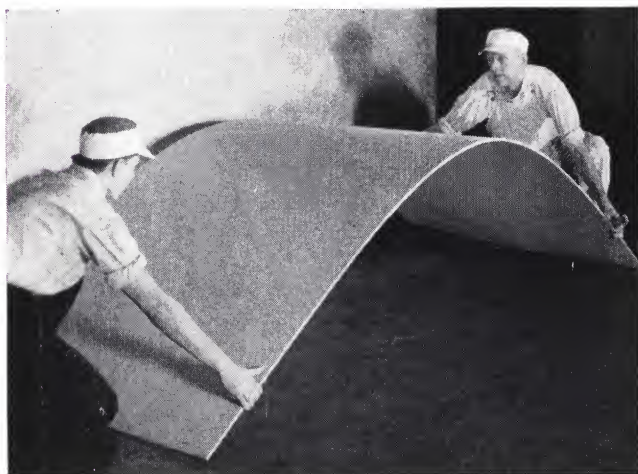
QUARTER-INCH SHEETROCK WALLBOARD

DESCRIPTION

Quarter-inch SHEETROCK is a utility gypsum wallboard. It is made with square edges only, 4' wide—7', 8', 9', and 10' long. Its highly calendered ivory colored surface takes any type of decoration.

FUNCTION AND UTILITY

Quarter-inch SHEETROCK is ideal for covering old unsightly walls and ceilings, in repair work, and for temporary or "cost factor" walls, ceilings and partitions in stores, offices, factories, etc.



FIREPROOF AND DURABLE. Quarter-inch SHEETROCK, with its gypsum core, has all the fireproof, non-warpage, and decorative features of SHEETROCK.

LIGHT WEIGHT. Its light weight makes it easy to handle and apply on ceilings.

CURVED SURFACES. Quarter-inch SHEETROCK is more flexible than thicker SHEETROCK and can be safely bent to a 5' radius lengthwise. This makes quarter-inch ideal for curved surfaces and display work.

LOW IN COST. Unit cost is lower than most other types of wallboard and is in the same price range as paper wallboard.

TAKES ANY JOINT TREATMENT. Joints may be reinforced with PERF-A-TAPE, treated with panel strips or simply filled with SHEETROCK Finisher.

TAKES ANY DECORATION. Its ivory colored surface provides an ideal surface for paint, wallpaper or textured decorations.

IDEAL FOR COVERING OLD WALLS AND CEILINGS. Quarter-inch can generally be applied directly over old walls without removing wood trim. PERF-A-TAPE Joint Treatment provides smooth "joint-free" walls.

LIMITATIONS OF USE

1. *Maximum stud spacing.* Quarter-inch SHEETROCK is designed for use on stud centers up to 16".
2. *New construction.* Not designed for use in normal new construction. One-half inch SHEETROCK is recommended.

TECHNICAL INFORMATION

RED TOP

REG. U. S. PAT. OFF.

INSULATING WOOL



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

GENERAL OFFICES—300 WEST ADAMS STREET, CHICAGO 6, ILLINOIS

ALBANY, N. Y.
ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM, ALA.
BOSTON, MASS.
BUFFALO, N. Y.

CHARLOTTE, N. C.
CHICAGO, ILL.
CINCINNATI, O.
CLEVELAND, O.
DALLAS, TEX.
DENVER, COLO.

DETROIT, MICH.
GRAND RAPIDS, MICH.
HARRISBURG, PA.
HOUSTON, TEX.
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.
KANSAS CITY, MO.

LOS ANGELES, CALIF.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
NEWARK, N. J.
NEW HAVEN, CONN.
NEW YORK, N. Y.
OKLAHOMA CITY, OKLA.

OMAHA, NEBR.
PHILADELPHIA, PA.
PITTSBURGH, PA.
PORTLAND, ORE.
PROVIDENCE, R. I.
RICHMOND, VA.

ST. LOUIS, MO.
SALT LAKE CITY, UTAH
SAN FRANCISCO, CALIF.
SEATTLE, WASH.
SYRACUSE, N. Y.
WASHINGTON, D. C.

RED TOP* INSULATING WOOL

DESCRIPTION

RED TOP Insulating Wool consists of mineral fibers mechanically formed either into a uniform mat of definite dimensions and controlled density or into a uniform pellet form suitable for pouring or blowing into framing spaces.

Batts—Are carefully formed mineral wool batts including a vapor barrier and nailing flanges. See table below for sizes.

Granulated—Consists of mineral fibers formed into nodules for either pouring and spreading by hand or for installation with an insulation blowing machine.

FUNCTION AND UTILITY

HIGH THERMAL RESISTANCE—Conductance is 0.27 per inch thickness and resistance 3.70 per inch thickness. See data sheet below for resistance for given thicknesses.

INCOMBUSTIBLE—The mineral fibers will not burn or support combustion.

RESISTANCE TO VAPOR TRANSMISSION—The asphalted paper resists the passage of water vapor and protects against condensation. It transmits less than 2.50 grains per sq. ft. per hour per lb. per sq. inch of pressure difference, which is within the limits of permeability recommended by many recognized authorities for normal building occupancy.

UNIFORM EFFECTIVENESS—Manufactured to closely controlled tolerance for density and dimension, for uniform insulation.

STABILITY—Highly resilient. Resists settling. The mineral fibers are resistant to decay, corrosion, moisture and all other forms of deterioration.

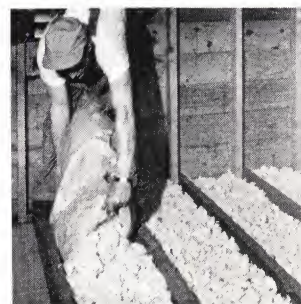
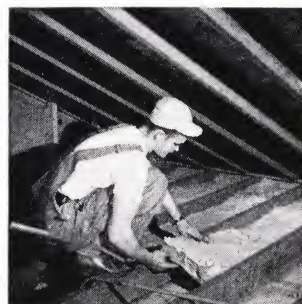
RESISTANT TO VERMIN—The mineral fibers offer no sustenance to vermin or rodent life.

LIGHT WEIGHT—see table below.

LIMITATIONS OF USE

1. **Masonry Walls**—It is recommended that at least a 1" air space be provided between insulation and exterior masonry. Suitable weep holes are recommended. If RED TOP Wool is placed in direct contact with exterior masonry walls, the masonry *must be watertight* to prevent the insulation from becoming wet. The insulation is less effective and transmits moisture to interior finishes if it becomes wet by direct contact with leaking exterior masonry.

2. **Attic Spaces**—Ventilation should be provided in attic or crawl spaces to guard against condensation and increase the effectiveness of summer insulation. A minimum of 1/4 square inch opening per



sq. ft. of top floor ceiling area is recommended, to be divided between gable ends.

3. **Metal Lath and Channel Ceilings**—Suspended ceilings may be insulated with batts installed with the vapor barrier down and all joints butted tightly together.

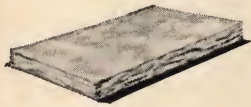

If preferred, granulated wool may be used for suspended ceilings and installed by a wool blowing machine. Many other types of otherwise inaccessible installations may be best served with granulated wool blown in place using a wool blowing machine.

However, a suitable vapor barrier should be provided, equal in effectiveness to the one provided with RED TOP Batts. Many standard asphalt coated and impregnated papers; aluminum foil, good oil paints and varnishes, will meet this requirement. Roofing felt is not recommended.

4. **Floors over Unexcavated Areas**—Insulating batts used between floor joists over unexcavated areas should be provided with additional support to insure a permanently effective installation. In all cases, the unexcavated area should be ventilated in accordance with good practice.

"RED TOP", "ROCKLATH", "USG", and "WEATHERWOOD" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "RED TOP" identifies the particular mineral wool sold only by United States Gypsum; "ROCKLATH" identifies the particular gypsum lath, "USG" the particular gypsum sheathing, and "WEATHERWOOD" the particular fiber insulation board manufactured only by United States Gypsum.

PRODUCT DATA

| | Type | Approx. Thickness | Framing Spacing | Length | Approx. Weight Sq. Ft. | Conductance (1) | | Resistance | |
|---|------------|-----------------------|--|------------|------------------------|-----------------|------|------------|-------|
| | | | | | | (k) | (C) | 1/k | 1/C |
|  | BATT | Medium 2" Thick 3" | 16" OC 16" OC | 24" or 48" | .58 lbs. | .27 | .135 | 3.70 | 7.40 |
| | | | | 24" or 48" | .87 lbs. | .27 | .090 | 3.70 | 11.10 |
| | BATT | Medium 2" Thick 3" | 24" OC 24" OC | 24" or 48" | .58 lbs. | .27 | .135 | 3.70 | 7.40 |
| | | | | 24" or 48" | .87 lbs. | .27 | .090 | 3.70 | 11.10 |
|  | GRANULATED | 2" | Supplied in Granular Form (Non-Preformed Dimension) | | 1.00 lbs. | .27 | .135 | 3.70 | 7.40 |
| | | 4" | | | 2.00 lbs. | .27 | .067 | 3.70 | 14.80 |
| | | 6" | | | 3.00 lbs. | .27 | .045 | 3.70 | 22.20 |

(1) Expressed in Btu per sq. ft. per hr. per degree F temperature difference. (k) is per inch thickness, (C) is for thickness stated.

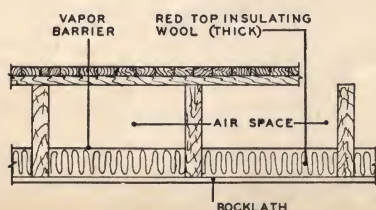
RED TOP INSULATING WOOL

CONDUCTIVITIES (k) AND CONDUCTANCES (C) FOR USE IN CALCULATING HEAT TRANSMISSION COEFFICIENTS

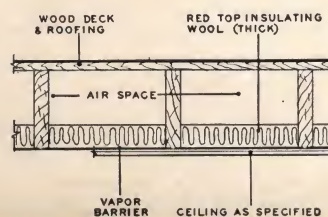
| MATERIAL | DESCRIPTION | Conductivity* or Conductance | | Resistance* Per Inch Thickness For Thickness Listed | |
|--|---|---|--|---|--|
| | | (k) | (C) | $\frac{1}{k}$ | $\frac{1}{C}$ |
| AIR SPACES (Bounded by ordinary materials) (With aluminum foil one side) | Vertical $\frac{3}{4}$ " or more in width | | 1.10 0.46 | | 0.91 2.17 |
| EXTERIOR FINISHES (Frame Walls) Brick Veneer Wood Shingles Yellow Pine Lap Siding | 4" thick (nominal) | | 2.27 1.28 1.28 | | 0.44 0.78 0.78 |
| INTERIOR FINISHES Gypsum Plaster Gypsum Board— $\frac{1}{2}$ " Gypsum Lath & Plaster Insulating Board Plaster Base, $\frac{1}{2}$ " Thick Metal Lath and Plaster Wood Lath and Plaster | Plain or Decorated Plaster Thickness $\frac{1}{2}$ " Plaster Thickness— $\frac{1}{2}$ " Plaster Thickness— $\frac{3}{4}$ " | 3.30 0.33 | 2.82 2.40 0.60 4.40 2.50 | 0.30 3.03 | 0.35 0.42 1.67 0.23 0.40 |
| MASONRY MATERIALS Brick Brick 3" Clay Tile (Hollow) 4" Clay Tile (Hollow) 6" Clay Tile (Hollow) 8" Clay Tile (Hollow) 10" Clay Tile (Hollow) 12" Clay Tile (Hollow) Concrete Concrete 3" Concrete Blocks 4" Concrete Blocks 8" Concrete Blocks 12" Concrete Blocks 8" Concrete Blocks 12" Concrete Blocks 3" Gypsum Tile 4" Gypsum Tile | Common Face 1 Air Cell Direction Heat Flow 1 Air Cell Direction Heat Flow 2 Air Cell Direction Heat Flow 2 Air Cell Direction Heat Flow 2 Air Cell Direction Heat Flow 3 Air Cell Direction Heat Flow Light Weight Aggregate Sand and Gravel Aggregate Hollow—Cinder Aggregate Hollow—Cinder Aggregate Hollow—Gravel Aggregate Hollow—Gravel Aggregate Hollow—Cinder Aggregate Hollow—Cinder Aggregate Hollow Hollow | 2.50 12.00 | 1.25 2.30 1.28 1.00 0.64 0.60 0.58 0.40 1.28 1.00 1.00 0.80 0.60 0.53 0.61 0.46 | 0.40 0.08 | 0.80 0.43 0.78 1.00 1.57 1.67 1.72 2.50 0.78 1.00 1.00 1.25 1.66 1.88 1.64 2.18 |
| ROOFING MATERIALS Asphalt Shingles Built-up Roofing Heavy Roll Roofing Wood Shingles | Assumed Thickness— $\frac{3}{8}$ " | | 6.50 3.53 6.50 1.28 | | 0.15 0.28 0.15 0.78 |
| SHEATHING Gypsum— $\frac{1}{2}$ " Insulating Board—25/32" Fir & Yellow Pine (1") | Actual Thickness—25/32" | | 2.82 0.42 1.02 | | 0.35 2.37 0.98 |
| SURFACES Still Air 15 MPH Wind Velocity | Ordinary Non-Reflective Materials Ordinary Non-Reflective (Vertical) Mat'ls. | | 1.65 6.00 | | 0.61 0.17 |
| WOODS Maple or Oak Yellow Pine or Fir Fir Sheathing—Building Paper and Yellow Pine Lap Siding | | 1.15 0.80 | 0.50 | 0.87 1.25 | 2.00 |

*Expressed in Btu per sq. ft. per hr. per deg. F. temperature difference. Conductivities (k) are per inch thickness and conductances (C) are for thickness of construction stated, not per inch of thickness.

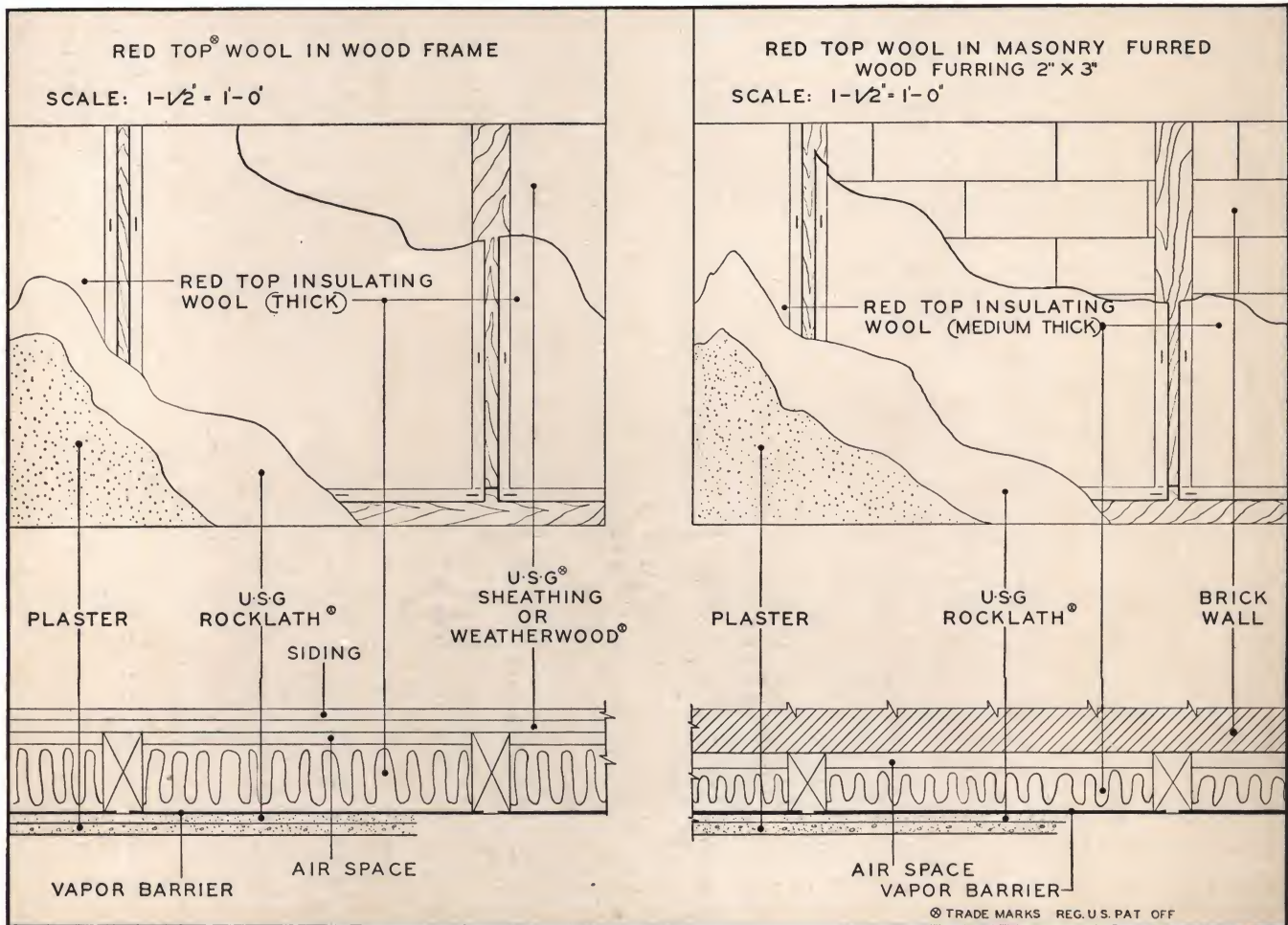
RED TOP WOOL FLOOR INSULATION
(Above unexcavated area)



RED TOP WOOL ROOF INSULATION



RED TOP INSULATING WOOL



INSULATION SPECIFICATIONS

SCOPE

Unless otherwise shown on plans, all insulation shall be furnished and installed according to these specifications.

MATERIAL

Insulation shall be (delete those not applicable to the project)

Thick RED TOP Insulating Wool Batts.

Medium Thick RED TOP Insulating Wool Batts.

RED TOP Insulating Wool Granulated.

All as supplied by the United States Gypsum Company.

APPLICATION

Insulating Wool Batts shall be installed within the stud spaces of all exterior walls and between the framing members of the top floor ceiling or roof. The asphalted vapor barrier shall face the inside of the building and the nailing flanges shall be tacked or stapled securely. Sufficient

tacks or staples shall be used to avoid gaps or bulges in the vapor barrier paper. In no case, shall they exceed a spacing of 4" on centers. Apply Insulation in all framing spaces as specified and, where necessary, the insulation and vapor barrier shall be cut to fit in a neat and workmanlike manner.

The contractor shall be responsible for breaks or tears in the vapor barrier. All such breaks or tears shall be repaired by cementing over each break, with asphalt, a piece of vapor barrier paper, cut to extend at least 6" from the break in all directions.

Floor Insulation—For insulation between floor and unexcavated space, the "Application" portion of the specification shall be changed to include this work, and the following paragraph should be added:

"The RED TOP Wool Batts shall be held and supported from the underside of the floor joists by any satisfactory support method such as lining the underside of the floor joists with ROCKLATH plaster base."

TECHNICAL INFORMATION

SABINITE

REG. U. S. PAT. OFF.

ACOUSTICAL PLASTER



United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

GENERAL OFFICES—300 WEST ADAMS STREET, CHICAGO 6, ILLINOIS

ALBANY, N. Y.
ATLANTA, GA.
BALTIMORE, MD.
BIRMINGHAM, ALA.
BOSTON, MASS.
BUFFALO, N. Y.

CHARLOTTE, N. C.
CHICAGO, ILL.
CINCINNATI, O.
CLEVELAND, O.
DALLAS, TEX.
DENVER, COLO.

DETROIT, MICH.
GRAND RAPIDS, MICH.
HARRISBURG, PA.
HOUSTON, TEX.
INDIANAPOLIS, IND.
JACKSONVILLE, FLA.
KANSAS CITY, MO.

LOS ANGELES, CALIF.
MILWAUKEE, WIS.
MINNEAPOLIS, MINN.
NEWARK, N. J.
NEW HAVEN, CONN.
NEW YORK, N. Y.
OKLAHOMA CITY, OKLA.

OMAHA, NEBR.
PHILADELPHIA, PA.
PITTSBURGH, PA.
PORTLAND, ORE.
PROVIDENCE, R. I.
RICHMOND, VA.

ST. LOUIS, MO.
SALT LAKE CITY, UTAH
SAN FRANCISCO, CALIF.
SEATTLE, WASH.
SYRACUSE, N. Y.
WASHINGTON, D. C.

SABINITE* ACOUSTICAL PLASTER

SABINITE TROWEL FINISH "M"

DESCRIPTION

SABINITE Trowel Finish is a highly efficient acoustical plaster, scientifically prepared to produce a continuous trowel finish of exceptional sound absorbent qualities. It is manufactured in four standard colors and white and requires the addition of water only.

FUNCTION AND UTILITY

SABINITE Trowel Finish acoustical plaster is particularly effective for sound conditioning.

Sound Absorption—Noise reduction coefficient of .60. (See table below.)

Fire Resistance—Basically a mineral, it is incombustible.

Beauty—Its fine texture troweled surface provides unusual beauty, eliminating the mechanical effect generally associated with acoustical treatment.

Adaptability—Conforms to any architectural design. Generally applied over new plastered surfaces, but may also be applied over most existing surfaces through use of a special asphalt emulsion bonding coat according to manufacturer's directions.

High Light Reflection—Laboratory tests indicate light reflection of 64 per cent for SABINITE Trowel Finish Oyster White.

Heat Insulation—SABINITE Trowel Finish has a "k" value of 0.50.

Maintenance—SABINITE Trowel Finish may be cleaned using a putty-type wallpaper cleaner or with a vacuum cleaner using hose and brush attachment.

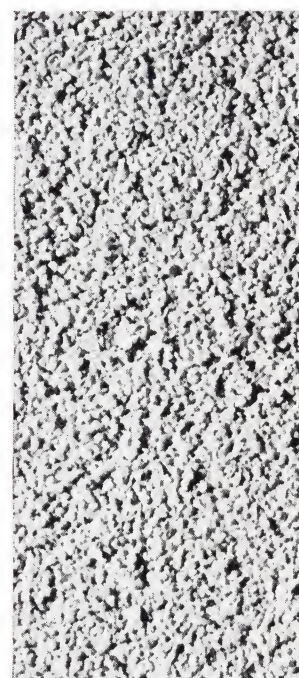
SABINITE Trowel Finish may be redecorated with TEXOLITE* paint (Standard or Imperial). Apply according to USG specification for painting SABINITE acoustical plaster. (See Page 4)

Tests by a nationally recognized laboratory showed

"SABINITE", "TEXOLITE", "RED TOP", "ROCKLATH" and "BONDCRETE" are registered trademarks owned by United States Gypsum, used by it to distinguish its products. "SABINITE" identifies the particular acoustical plaster; "TEXOLITE" identifies the particular paint; "RED TOP" identifies the particular gypsum plaster; "ROCKLATH" identifies the particular gypsum lath and "BONDCRETE" the particular plaster for concrete surfaces manufactured only by United States Gypsum.



Sabinite Trowel Finish



Sabinite Float Finish and 38

SABINITE Trowel Finish had a noise reduction coefficient of .50 after 5 spray coats of Imperial TEXOLITE paint were applied.

Easily Applied—Any good plaster craftsman can apply SABINITE.

Economical—Gives more sound absorption per dollar invested than most other commonly used acoustical materials. Low in initial cost.

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.
2. Should not be used where exposed to excessive moisture, (See SABINITE 38—Next Page), and should not be used on the exterior where exposed to the elements.
3. To insure best results, SABINITE must be applied in strict accordance with manufacturer's directions.

SOUND ABSORPTION DATA

| SABINITE Type | Thickness | 128 | 256 | 512 | 1024 | 2048 | 4096 | NRC | Authority |
|---------------|-----------|-----|-----|-----|------|------|------|-----|----------------|
| Trowel Finish | 1/2 Inch | .16 | .26 | .48 | .77 | .83 | .85 | .60 | B. of Stds. |
| Float Finish | 1/2 Inch | .19 | .22 | .43 | .80 | .75 | .75 | .55 | B. of Stds. |
| 38 | 1/2 Inch | .25 | .26 | .32 | .60 | .76 | | .50 | Riverbank Lab. |

SABINITE ACOUSTICAL PLASTER

SABINITE FLOAT FINISH "F"

DESCRIPTION

SABINITE Float Finish is a highly efficient acoustical plaster used where a float finish is desired. It is manufactured in four standard colors and white and requires the addition of water only.

FUNCTION AND UTILITY

SABINITE Float Finish acoustical plaster is effective for sound conditioning and has a slightly harder surface than SABINITE Trowel Finish.

Sound Absorption—Noise Reduction Coefficient of .55. (See table on opposite page.)

Fire Resistance—Basically mineral, it is incombustible.

Appearance—Its continuous floated surface provides the appearance of a heavy sand float finish.

Adaptability—Conforms to most architectural designs.

High Light Reflection—Laboratory tests indicate light reflection of 54 per cent for SABINITE Float Finish Oyster White.

Heat Insulation—SABINITE Float Finish has a "k" value of 0.76.

Maintenance—SABINITE Float Finish may be cleaned with a vacuum cleaner using hose and brush attachments. SABINITE Float Finish may be redecorated with TEXOLITE paint (Standard or Imperial). Apply according to USG specification of painting SABINITE acoustical plaster. (See following page)

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage
2. Must be applied over new plastered surfaces.
3. Should not be used where exposed to excessive moisture (use SABINITE 38), and should not be used on the exterior where exposed to the elements.
4. To insure best results, SABINITE Float Finish must be applied in strict accordance with manufacturer's directions.

SABINITE 38

DESCRIPTION

SABINITE 38 is an hydraulic acoustical plaster prepared for use in locations subjected to high moisture conditions. It is manufactured in white only and provides a float finish.

FUNCTION AND UTILITY

SABINITE 38 is effective for sound conditioning in shower rooms, for ceilings in swimming pools, etc.

Sound Absorption—Noise Reduction Coefficient of .50. (See table on opposite page.)

Fire Resistance—Basically a mineral, it is incombustible.

Appearance—Its continuous floated surface provides the appearance of a heavy sand float finish.

Adaptability—Conforms to most architectural designs.

Heat Insulation—SABINITE 38 has a "k" value of 0.80 (estimated).

Maintenance—SABINITE 38 may be cleaned with a vacuum cleaner using hose and brush attachments.

It may be painted with Imperial TEXOLITE paint applied according to USG directions which will vary with conditions encountered. These directions are available upon request.

LIMITATIONS

1. Designed for use on ceilings and areas not exposed to rough usage.
2. Must be applied only over a portland cement-lime basecoat.
3. To insure best results, SABINITE 38 must be applied in strict accordance with manufacturer's directions.

PLASTERING SPECIFICATIONS

GENERAL PROVISIONS

In cold weather a minimum temperature of 40°F. shall be maintained in the building until the plaster is dry. After plaster has set, ventilation shall be provided to eliminate excessive moisture in the building. In hot, dry weather, all openings shall be closed with sash or cloth during the application of plaster. No plaster shall be allowed to dry before setting.

SCOPE

Unless otherwise shown on drawings, all walls and ceilings shall be finished as herein described.

MATERIALS

Finish Coat—Acoustical plaster shall be SABINITE Acoustical Plaster (Type M) (Type F) (Type 38) (Specify) manufactured by United States Gypsum Company. Color shall be as designated by the architect.

MIXING AND APPLICATION

Mixing and application of SABINITE Acoustical Plaster and the basecoat plaster shall be in strict accordance with the manufacturer's printed directions which are hereby made a part of this specification.

MIXING & APPLICATION OF SABINITE

SABINITE TROWEL FINISH

MIXING

Machine Mixing Recommended. Put 24 quarts clean water in mixer for each bag of SABINITE Trowel Finish. Mix until SABINITE weighs 15 to 17 pounds net per 12-quart pail (usually 3 to 5 minutes mixing required, depending on speed of mixer).

For Hand Mixing. Place SABINITE Trowel Finish in one end of mixing box.

For each bag of SABINITE Trowel Finish add 24 quarts of clean water in the other end of box.

Hoe SABINITE Trowel Finish into water. The mix will appear dry, but continue hoeing. *Do not add more water.*

Mix until SABINITE weighs 15 to 17 pounds net per 12-quart pail (approximately 15 minutes per 2-bag batch).

APPLICATION

SABINITE Trowel Finish shall be applied in 2 coats to a uniform total thickness of $\frac{1}{2}$ inch over a base coat of RED TOP* gypsum plaster. A full scratch and brown coat are required over metal lath, ROCKLATH* plaster base and masonry bases (not monolithic concrete).

First Coat: Apply the first coat of SABINITE $\frac{3}{8}$ inch thick over a set, cross raked brown coat which is thoroughly green (brown coat *must* be wet throughout, *not* merely damp. Darby lightly to a level surface. Allow to set and dry until surface is crusty.

If brown coat is *half green* or *dry*, wet sufficiently to reduce suction and apply a $\frac{1}{4}$ inch bonding coat of gypsum plaster sanded 2:1 by weight. Before bonding coat has set, follow immediately with the first $\frac{3}{8}$ inch coat of SABINITE.

Over properly prepared *monolithic concrete surfaces* apply BOND-CRETE* plaster not to exceed $\frac{1}{4}$ inch thickness on ceilings and $\frac{3}{8}$ inch on side-walls. Apply the first $\frac{3}{8}$ inch coat of SABINITE over the unset BOND-CRETE or if set apply while thoroughly green. Darby lightly to a level surface immediately after application. Allow to set and dry until surface is crusty.

Finish Coat: Apply SABINITE finish coat $\frac{1}{8}$ inch thick, scratching in and immediately doubling back, leaving surface free of trowel marks, working from wet edge to avoid joinings. After water sheen leaves surface (about 30 minutes after application), *trowel lightly* (do not float) for uniform texture. Do not use water during troweling.

SABINITE FLOAT FINISH

MIXING

Machine Mixing Preferred

Add not over 35 qts. of clean water per bag of SABINITE Float Finish. Add SABINITE to water. Mix 3 to 4 minutes until light and fluffy.

Hand Mixing

Add not over 37 qts. of clean water per bag of SABINITE Float Finish. Hoe until plaster is uniformly wet. Allow to soak for a few minutes, then hoe until mortar is light and fluffy. A 2-bag batch requires about 8 minutes mixing for proper consistency.

APPLICATION

SABINITE Float Finish shall be applied over a level, cross-raked and uniformly dry scratch and brown basecoat of gypsum plaster.

Apply first coat of SABINITE Float Finish $\frac{1}{4}$ inch thick and bring to a true, even surface with trowel. When water sheen has left surface, broom and allow to set and dry.

Apply finish coat of SABINITE Float Finish $\frac{1}{4}$ inch thick. As water sheen leaves surface, finish with shingle or cork float. Areas must be finished in one operation to avoid joining. *Do not use water* in floating.

DIRECT APPLICATION OF SABINITE TROWEL FINISH TO EXISTING CEILINGS OR CONCRETE

SABINITE Trowel Finish may be applied over existing plaster, and over new or existing concrete ceilings, with the use of asphalt emulsion (Type N-13 HPC or C-13HPC) as a bonding agent.

On existing painted plaster or concrete ceilings the surface must be *dry, clean and sound*. Calcimine or similar powder paints must be washed off and wax, grease or oil removed. Loose or improperly bonded plaster or paint must be removed and such areas repaired with wood fiber or patching plaster. Allow patches to dry 2 to 3 days.

On new concrete ceilings which are smooth, level and dense (not suitable for BOND-CRETE application) the surface must be *dry, free of dust, oil, grease or efflorescence*.

Size any porous concrete or porous or unpainted plaster surfaces with cut-back asphalt, shellac or varnish to reduce suction before asphalt emulsion is applied.

Trowel asphalt emulsion in thin coat not to exceed $\frac{1}{8}$ inch, making certain entire ceiling area is covered.

The first $\frac{3}{8}$ inch coat of SABINITE Trowel Finish should follow application of the emulsion as closely as possible or at least within 2 hours.

Darby first coat of SABINITE to an even surface with a minimum of pressure. Allow to set and dry, until surface is crusty.

Apply SABINITE Finish Coat $\frac{1}{8}$ inch thick, scratching in and immediately doubling back, leaving surface free of trowel marks, working from wet edge to avoid joinings. After water sheen leaves surface (about 30 minutes after application), *Trowel lightly* (do not float) for uniform texture. Do not use water during troweling.

NOTE: Only SABINITE Trowel Finish may be applied using this method.

SABINITE 38

MIXING

Machine Mixing Preferred

Add not over 31 qts. of clean water per bag of Sabinite 38. Add Sabinite to water. Mix 3 to 4 minutes until light and fluffy.

Hand Mixing

Add not over 33 qts. of clean water per bag of SABINITE 38. Hoe until plaster is uniformly wet. Allow to soak for a few minutes, then hoe until mortar is light and fluffy. A 2-bag batch requires about 8 minutes mixing for proper consistency.

APPLICATION

SABINITE 38 shall be applied *only* over a level, cross-raked thoroughly cured and uniformly dry scratch and brown coat of portland cement-lime plaster.

Apply first coat of SABINITE 38 $\frac{1}{4}$ inch thick and bring to a true, even surface with trowel. When water sheen has left surface, broom and allow to set and dry.

Apply finish coat of SABINITE 38 $\frac{1}{4}$ inch thick. As water sheen leaves surface, finish with shingle or cork float. Areas must be finished in one operation to avoid joining. *Do not use water* in floating.

DIRECTIONS FOR PAINTING

SABINITE TROWEL FINISH AND FLOAT FINISH

Surface Preparation: Remove all loose dirt or dust by use of hand vacuum or putty type cleaner.

PAINT: Water thinned paint (Regular TEXOLITE, casein base, or Imperial TEXOLITE, resin base), in desired color. First coat mix one part TEXOLITE paste to one part water by volume. Mix second coat if required, one part TEXOLITE paste to two parts water by volume.

SPRAY GUN: Any gun which can be adjusted for a medium fine spray can be used preferably the Devilbiss spray gun, Type MBD, with a No. 30 nozzle or equivalent.

SPRAY PRESSURE: Use 30 to 40 lbs. pressure in the gun and 20 to 30 lbs. on the paint.

SPRAYING: Adjust nozzle for a medium fine spray. Hold nozzle 14 to 18 inches away from the work, using a slow, uniform pass over the surface sufficient to cover in one pass. Do not pass over same area several times since this builds up paint unnecessarily.

DRYING: Allow at least overnight drying between coats, but if weather is extremely humid allow additional drying as necessary.

NOTE: Brush painting is not recommended.

SABINITE 38—Painting directions are available upon request.

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